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NEW . . . From Saunders

Haagensen's

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Dr. C. D. Haagensen, a world-famous authority on cancer of the breast, describes here the current methods of diagnosis and management he is using today for the treatment of breast diseases.

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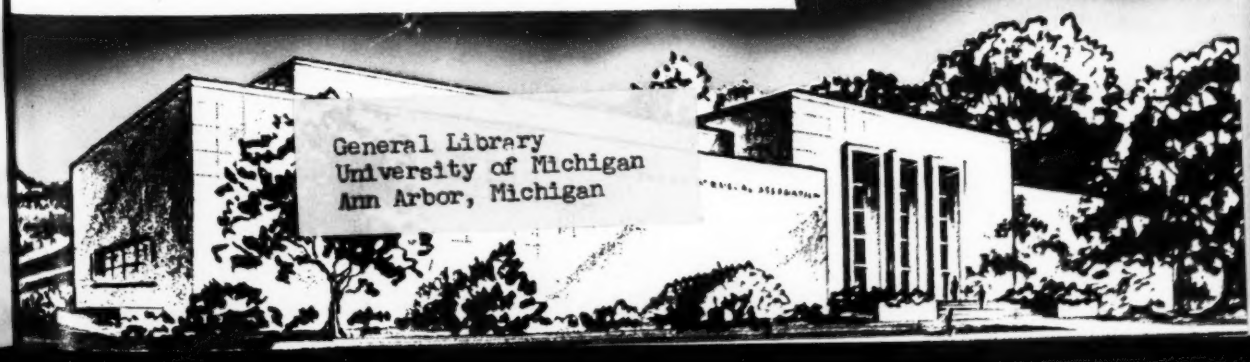

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World Medical Association

When physicians from various parts of the world meet together, it is apparent that they have much in common and share many similar attitudes. In a sense, physicians speak a common language and perhaps can get together with more facility than any other group at an international level.

The World Medical Association, composed of national medical associations most representative of the medical profession in each nation, now is established and accepted at the international level as the professional organization of physicians. It deals with problems of the profession with other international groups such as the World Health Organization (governments in the public health field), the International Red Cross, the International Labor Organization, and the International Social Security Association.

The tenth general assembly of the World Medical Association was held October 9-14 in beautiful Havana, Cuba. The members of the Cuban Medical Association were cordial hosts. Dr. J. A. Bustamante of Havana, president of the World Medical Association, presided at the meetings of the assembly.

The meeting was attended by about 350 physicians representing 53 nations. Since the meeting was held in Havana, the attendance from the Latin American nations was higher than in previous years, and it is hoped that such an increase in attendance from this area will stimulate a sustained interest in the affairs of the World Medical Association. The Pan American Medical Confederation has been a prominent medical organization in Latin America for years, and it expressed the intention to cooperate with and assist the World Medical Association in the future.

No nation behind the iron curtain is a member of the World Medical Association, but most of the European nations sent delegates. Representation from the Asiatic area was sparse —because of the cost of travel for such great distances. A number of the delegates from Europe and Asia traveled in the USA before or after the meeting.

Dr. Dwight H. Murray and I had the honor to serve as delegates from the American Medical Association, while Dr. Leonard W. Larson and Dr. Elmer Hess served as alternate delegates. Dr. Edwin S. Hamilton and Dr. Gunnar Gundersen are currently serving as members of the council, Dr. Gundersen having recently been reelected. The council serves as a policy body between the meetings of the general assembly, held annually in the fall.

The World Medical Association helps to establish professional standards on ethics of physicians dealing with each other and their patients, and it serves to establish principles as guides for professional services, especially as related to governments which are attempting to control the mode of practice of medicine.

At the Havana meeting, one of the most significant discussions dealt with social security. Dr. Dag Knutson of Sweden, chairman of the Committee on Social Security, made a significant report. He pointed out again the degrees of struggle in various nations between the medical profession and the social security authorities. Dr. P. Glorieux of Belgium related the experiences during the past year of the severe struggle between the profession and the government in his country—the profession finally winning by an insurance system sponsored by the profession.

Before adjourning the delegates voted to hold their next meeting in early October, 1957, in Istanbul, Turkey.

It was the opinion of physicians who have attended several assembly meetings that the sense of unity and community of spirit was much more apparent in this meeting than had been present in earlier ones.

The financial condition of the World Medical Association is improving in spite of the limitation of exchange of monies throughout the world. The language barrier is less and English is widely used, though simultaneous translations are made in English, French, and Spanish.

A number of Texas physicians attended the Havana meeting, and it has been suggested that a social gathering be held at the time of our Texas Medical Association annual sessions to arrange a Committee of the World Medical Association in Texas to encourage interest and membership in the U. S. Committee of the WMA.

As Dr. Walter B. Martin, former President of the American Medical Association, wrote:

> The voice and the arm of the World Medical Association needs to be powerfully strengthened so it can adequately meet the sustained pressure from international groups and their American allies. The American supporting committee to the World Medical Association has been rapidly expanding in number and has given substantial aid and support to the W.M.A. Further expansion of this committee will be necessary if the American viewpoint is to be continually and effectively presented by our spokesmen in the World Medical Association and through them before other international bodies to protect the interests and aims of medicine and the medical profession.*

Surely Texas doctors will wish to share in this international effort.

—F. J. L. BLASINGAME, M. D.
Wharton, Texas

Medical Research Boosted

After a quiet beginning, the Medical Research Foundation of Texas, which potentially can change completely the picture of medical and dental research in this state, is ready to make itself known.

Headed by doctors, dentists, scientists, educators, and business leaders of unquestioned repute, the foundation has been established to attract to Texas the type of funds necessary to support modern and urgently needed research in the medical and dental sciences. Such re-

*President's Page, J.A.M.A. 156:1256 (Nov. 27) 1954.

search, in addition to saving lives, suffering, and dollars in productive work, will promote high standards of education in the centers where it is carried on.

It has been pointed out that $300,000,000 was spent in 1955 for medical research throughout the United States. But only one-hundredth of this amount ($3,000,000) was spent in Texas, although one-twentieth of the population of the United States resides in Texas. Furthermore, more than 40 per cent of the research grants in Texas are coming from divisions of the federal government, which might lay the groundwork for governmental interference.

Dr. Carl A. Nau, professor of preventive medicine and public health at the University of Texas Medical Branch in Galveston, has told the board of directors of the Medical Research Foundation of Texas that adequate support from private and industrial sources currently is limited by the following factors:

1. Space for research in most Texas institutions is inadequate because they must give first consideration to teaching, yet research funds generally do not provide for construction or renovation of space.

2. Research funds do not usually provide for many types of equipment and machinery.

3. Research funds do not provide adequately for employment of trained, skilled, and dedicated technical workers.

4. Usual funds are not available to younger scientists who have not achieved prominence but who may have special skills and valid approaches to research problems.

If these basic limitations can be overcome through funds supplied through some such agent as the new foundation, already established schools and research centers will be in a position to attract a fair share of research grants among those now going too often to institutions in other parts of the country. It is estimated that for every $1 the Medical Research Foundation of Texas spends for improvement of facilities as enumerated, $3 to $5 will be attracted from other sources.

It is hoped that the foundation also will serve as a clearinghouse or coordinator to develop greater teamwork among institutions carrying on research and between them and industry.

The Medical Research Foundation of Texas has established itself on a firm footing in an area in which action has been needed. It promises much for the future, but only if the institutions it seeks to serve, the graduates and friends of those institutions, and the public which finally will be the chief beneficiary do their part to make its dream come true.

Medical Care for All Through Federal Subsidy

Another national election has come and gone, but in its wake remain several proposals involving federal aid for health and medical care which were expounded by aspirants to public office in order to attract support for their candidacy. Successful candidates likely will recognize a mandate to promote those ideas in the eighty-fifth Congress next January.

Additional social security legislation, a government plan of health reinsurance, federal aid to medical schools, and federal loan insurance for the construction of medical facilities were among the ideas offered by candidates and their parties.

The health proposal which drew the greatest attention of all in the November election was put forth by a nominee for president. He advocated a four-point program of federal aid to guarantee hospital and medical aid to all. As he suggested, the federal government might give matching grants to the states to pay a part of the costs of voluntary health insurance for low income families and individuals. Or, perhaps, federal funds might be made available in the form of long-term interest bearing loans to cooperative labor and other groups which are initiating health insurance programs.

In advocating this program, the candidate would have had us believe that there is a ma-

jor distinction between socialized medicine and his plan to make comprehensive medical care available to all individuals. This new giveaway proposal certainly would be a forerunner to a system of complete federal medical care.

The present high quality of medical care is certain to deteriorate in any federal program, and the patient stands to suffer the greatest loss. The patient loses freedom of action in controlling his medical affairs. He has no guarantee of being free to choose the doctor, the hospital, or the service he prefers—and when he wants them.

When individuals are entitled to free medical care in a federal program, an increasing demand for services is certain to work to the disadvantage of those who are honestly ill. The person who is sick and is in need of careful attention must stand in line along with throngs of people with minor complaints or imaginary ailments and those who have a desire for a "free check-up" or a day's vacation from work.

And equally important, if the government pays the cost of medical care, the present private relationship between the patient and his doctor will be jeopardized. The doctor will become responsible primarily to the government, which is picking up the check, and then to the patient, as a secondary consideration. The physician also will be forced to waste valuable hours on the paper work and red tape which are part and parcel of any government program of medical care.

In substance, the federal government is too big and too far removed to administer medical problems, which are individual, personal, and local in nature.

In addition, this most recent proposal embracing medical care for all through federal subsidy could add greatly to the tax responsibility for millions of Americans.

In this election year and on the eve of another session of Congress, all citizens should reflect upon the great progress in the application of medical science which has been made in the United States under a voluntary system of private medical care. No great nation in the world has better health among its population than prevails in the United States. Unparalleled progress in recent years is reflected in low maternity and morbidity rates, the increased life expectancy, and, most recently, for example, in reduced incidence and severity of poliomyelitis. The present high quality of medical care and the trend toward even greater progress is certain to continue unabated in an atmosphere relatively free of government intervention.

Annual Session Program Takes Shape for 1957

It is not too early to make plans to be in Dallas April 27-May 1 for the 1957 annual session of the Texas Medical Association and concurrent meetings of 17 related specialty societies. Definite arrangements are being completed by all of the groups concerned, and already more than a score of outstanding out-of-state authorities in the various fields of medical practice have agreed to come to Texas as guest speakers for the meetings. These and several more guest speakers yet to be obtained will highlight a five day program of general meetings, refresher courses, scientific section meetings, and related organization sessions. Scientific and technical exhibits, motion pictures, business meetings of the House of Delegates, convention of the Woman's Auxiliary, alumni banquets, fraternity parties, memorial services, and entertainment featuring the President's party will add to the annual session activities of special interest to all members and will encourage attendance perhaps to top last year's record 2,807 registered in Galveston.

The complete list of guest speakers to date is enumerated in the Organization Section of this *Journal*. Some background information on how the list of speakers was obtained shows the spirit of the annual session planning—cooperative. As for the past several annual ses-

sions, each related organization was advised of and invited to participate in the guest-sharing program—that is, an arrangement whereby the Texas Medical Association pays half the expenses of a guest and the sponsoring group pays the other half, the guest in turn being made available for various assignments on the convention program. From then on, it was a matter of cooperation and mutual understanding between the Council on Scientific Work, which supervises the over-all annual session program, and the related organizations. More than half of the guests listed have been obtained under this joint financial arrangement.

Several groups which do not meet in conjunction with the annual session also contribute to the guest program. The Texas Division, American Cancer Society, is paying the full expenses of two guests in the cancer field, and the Texas Pediatric Society is sharing the expenses of one guest.

All in all, an outstanding program will be offered through the joint efforts of numerous groups and individuals. The 1957 annual session plans are well under way, and now is the time for every doctor to set aside the dates, April 27-May 1, for his trip to Dallas.

Thought for Thanksgiving

November is Thanksgiving month with its kaleidoscope of turkey, football, first frost, and a thought for the blessings of the year.

Not discounting the legislative, public relations, economic, and other problems that harass the medical profession, physicians in this country have much to be thankful for. It is meet that the doctor pause in his busy rounds to give thanks and to consider how he can best take advantage of his gifts and his station in life for himself, his family, and those he serves.

Contemplation can make possible a better utilization of time, create a better sense of values, lead toward tranquility of spirit, establish desirable goals, and suggest methods of achieving them.

As he strives to be of greater service to mankind, the physician might meditate on these:

The reasons why he is a physician. The things he can do to make himself a better physician. His responsibility to his patients. His responsibility to the profession.

The place of the physician in society. His duty to work with others in the common cause of better health. His need to apply his intellect and education to the social, economic, and political concerns of the day—even those not related to health.

The importance of developing himself as a well rounded person for his own sake and the sake of those with whom he associates. His duty to his wife and children. His duty to his God.

Today is frantically full. Tomorrow promises to be no better, unless a man takes advantage of that power which distinguishes him from all other creatures and thinks.

Thanksgiving is a time to count one's blessings, not as a miser, but as one looking forward to still greater things to be achieved at least partly through the quiet mind, the contemplative attitude, and the resolve, with divine help, to do better.

Clinicopathologic Conference Offered

Another in the series of more than 20 changes effected in the *Texas State Journal of Medicine* during the past year as a result of opinions expressed by its readers, primarily in the questionnaire survey conducted in February, appears for the first time in this issue. A clinicopathologic conference is reported in a special department to follow Original Articles and Case Reports sections when material and space permits.

The medical staff of Harris Hospital, Fort Worth, is responsible for this first "CPC." Several other groups have been asked to submit contributions, and it is hoped that any group with an interesting case will prepare it for review.

President's Page

WISE PROVISION FOR DISABILITY

The revised Texas Medical Association group disability insurance plan, officially announced last month, is pronounced by experts to be one of the best values of its kind obtainable anywhere. The Council on Medical Economics, the Board of Trustees, Charles O. Finley and Company (administrators of the plan), and the Lumbermens Mutual Insurance Company all teamed up together to offer a splendid policy at moderate premium rates.

One basic provision is that physicians in the younger age brackets pay a much lower premium than is usually found in group disability insurance, although the benefits are the same as for the older doctors.

One of the most practical ways for medical men to continue to avoid compulsory inclusion in the social security system is for them to protect themselves with voluntary insurance, both life and disability, so as to minimize the temptation for a few shortsighted brethren to be trapped by the welfare do-gooders. If you have not yet enrolled in the Texas Medical group disability plan, do so STAT!

WHO'S KIDDING WHOM?

Well informed citizens of the United States were amazed at the appalling lack of understanding of "socialized medicine" and private enterprise medical care shown by a presidential candidate in a widely reported talk in recent weeks. Bland promises of better health for a people now enjoying the highest standards of medical care in the world's history were made by a man whose intelligence should have insured a more reasonable understanding. It illustrated vividly how insidiously propaganda and socialistic principles have been indoctrinated in men who still kid themselves—and some others—in maintaining stoutly that they abhor "socialized medicine."

We physicians need to continue to cerebrate clearly, to make sure that we do not get confused. Many a busy doctor gets taken in by the

claptrap of politicians dishing out half-baked ideologies to gullible constituents. Every compromise with encroaching federal power dilutes our strength to maintain our professional integrity and independence.

And remember that 200,000 physicians can wield a tremendous influence among their patients and fellow citizens, particularly with the aid of their wives in the auxiliaries. This influence stems from capable, conscientious, considerate professional service, supplemented by unselfish civic participation.

We usually have the kind of government we deserve. Inconceivable as it is, some doctors and their wives did not vote November 6 —and probably could not name their representatives in the Legislature and in Congress. While your representative or congressman is at home in November and December is the time to make his acquaintance or renew old friendships. Then a contact next spring will mean something.

NEW COUNTY OFFICERS

Most component medical societies of the Texas Medical Association elect their 1957 officers next month, December. Leadership in such a society calls for real sacrifice in most instances and is not just an empty honor. Therefore great care should be exercised in their election, especially in the instances of president, secretary, and delegates. The value of a county society to its membership and to its community is measured in terms of the ability and the devotion of its leaders.

INVEST IN PATIENT CARE

Texas physicians are responding to the invitation to have a part as individuals in supporting the 1957 financial program of the Texas Commission on Patient Care. Our part of $7,500, distributed among our 7,324 members, makes clear the individual responsibility of each of us. If you have not sent your check, do so today—1801 N. Lamar, Austin.

Milford O. Rouse, MD

ORIGINAL ARTICLES

Treatment of Psychiatric Patients In a General Hospital

Psychotherapeutic Approach

O. SPURGEON ENGLISH, M. D.

Philadelphia, Pennsylvania

THE UNIQUE need for an "open" psychiatric section in a general hospital has been advocated for years, but its actual utilization has gained ground slowly. One of the most convincing reasons for such a section is its implication that psychiatric illness is comparable to organic illness, rather than a "different" condition to be handled mainly by isolation and withdrawal from the healthy world in a mental hospital. Such a section puts psychiatry where it not only does great good for the patient but is convenient and helpful to the referring physician, the organic specialist, and the family as well. It puts the patient in a position where consultation from other services is readily available. It permits an easy transfer of the patient from one service to another when care other than psychiatric is indicated. Additionally, it offers a unique opportunity to promote research in a more effective psychotherapy since the reliance must be on increased wisdom and integration of the therapeutic group rather than on locks, pills, and suppressive and inhibitory measures of a physical nature. This opportunity is not similarly available in the analytic outpatient office or the closed mental hospital.

An "open" psychiatric section performs a useful educational function for the whole hospital since it enables everyone to see that with proper understanding, treatment, and nursing care, quite sick people can be taken care of in a general hospital. It also tends to reduce, in a medical aura, some of the apprehension commonly felt about emotionally sick people. The needs of the emotionally sick become better known throughout a hospital when such patients are being cared for in an open hospital section. This unquestionably results in patients obtaining earlier treatment, and it creates fairly far-reaching preventive effects on mental illness.

Dr. O. Spurgeon English is a professor and head of the Department of Psychiatry, Temple University Medical Center, Philadelphia. He presented this paper before the Texas Neuropsychiatric Association, April 22, 1956, in Galveston.

A psychiatric unit in a general hospital, mainly utilizing the psychotherapeutic approach, solves many problems for the psychiatrist, referring colleagues, and patient. A friendly environment of interested, sympathetic people and a therapeutic plan in which everyone joins can do much to help the patient rather quickly although such treatment is expensive in time and personnel.

Finally, care of emotionally ill patients in a special section within a general hospital offers a unique opportunity for collaborative work in psychiatric and psychosomatic problems. It makes possible the adequate treatment of severe psychosomatic cases by having available organic specialists who are trained to integrate in this interdisciplinary approach.

INDICATIONS FOR HOSPITAL CARE

There are many indications for hospitalization of emotionally disturbed patients who are not ordinarily thought of as being "ill enough" to enter the average public or private mental hospital.

For instance, there are the psychoneurotic reactions that cause a patient great anxiety. Patients develop periods of panic lasting from minutes to hours during which they feel they are severely sick or are going to die. Such patients become great emotional burdens to family members and to the family physician. They tend to telephone the doctor frequently, day

The author wishes to acknowledge the ideas and contributions of Drs. H. Keith Fischer and Harry H. Wagenheim of the Department of Psychiatry, Temple University Medical Center, which enhance the usefulness of this paper.

and night, and they make great demands for reassurance, medicine, and advice. Moreover, even in ambulatory psychiatric treatment, these patients are unable for some time to derive enough insight and emotional support from office visits to make visible progress. A period of hospitalization varying from two weeks to one month gives them not only reassurance while there, but enough insight and beginning understanding of their neurotic problem so that ambulatory therapy can be carried on much more satisfactorily.

Another type of patient who needs hospital care for a temporary period is one who lives in a family environment which has grown uncongenial to him and which impinges so seriously on his neurotic pattern as to interfere with progress. This environment may be either hostile, over-protective, or sufficiently lacking in understanding so that a change is greatly needed in order that psychotherapy can get under way. Conversely, it might be added that a patient may have such a disturbing effect upon the family environment that they need a rest from him.

A third reason for a period of hospitalization is the desirability of structuring the environment for the patient so that certain demands can be made upon him which will enhance his emotional growth toward maturity. It is well known that patients will cooperate better with strangers than with their own families. They will accept demands made upon them in a hospital environment which they will not accept at home. And this, of course, is even truer when the patient understands that this new environmental structure is a part of therapy.

Another important reason for hospitalization is to relieve a patient of certain environmental demands which are being made upon him at home, and to build his environment so that he has an opportunity to regress, to relax, and to be free from the necessity of living up to particular expectations until a desirable degree of ego strength has been achieved.

Hospitalization often is desirable for the purpose of studying at close range the patient's emotional reaction to new faces and new personalities in an around-the-clock fashion. When a patient has been complaining, for instance, that his regular environment has been inimical to him, it may come as an important piece of insight to him to discover that he has the same feelings within the hospital atmosphere.

It is usually found that the patient derives a good effect from seeing other people in various stages of recovery from emotional illness. It tends to remove some of his feeling that he is "the only case of his kind" and removes some of his sense of loneliness and isolation to be in the company of other people who are working toward goals similar to his. Occasionally, a patient may receive a really adverse effect by association with other emotionally ill patients even though the degree of illness is not severe, but this is the exception and not the rule.

For the patient who is badly lost in his morbid thinking about himself, it is possible in the hospital environment to introduce certain diversionary as well as therapeutically valuable experiences such as occupational therapy, art therapy, bibliotherapy, and sociotherapy.

It may be desirable to have a psychosomatic patient treated in the hospital environment where, for a time, a combined effort on the part of the internist and psychiatrist is made. It is obvious, further, that some patients need the security offered by 24 hour supervision of a trained therapeutic team.

Hospital care, by involving several psychiatrically trained people, may make it possible to meet more of the patient's emotional needs quantitatively as well as qualitatively and therefore enable him to make gains not possible in ambulatory psychotherapy with only one person. In this connection, psychiatry is learning more and more about what can be done and what serious cases can be improved or cured just by seeing that certain important emotional needs of the patient are met while psychotherapy is being carried on. It is believed that some of the public and some of the general hospitals react against mental patients not so much because they fear that patients will become unmanageable, but because it is too disturbing to have patients make their emotional needs known in ways that cannot be understood, let alone met. Some disturbed patients make the doctor, nurse, and family so uncomfortable that in their bafflement they turn against the patient, thereby increasing tension, enhancing his aggression, and intensifying his acting out. This, of course, makes him even more ill. In short, the emotionally ill patient and the medical profession have been suffering from a lack of satisfactory communication.

DESCRIPTION OF UNIT

The section for psychiatric patients in the Temple University Hospital in Philadelphia has been in operation since 1950. It consists of a floor of private rooms for about 12 patients. It is situated on the third floor of an old building with conventional window screens and a sun porch put to use as a day room. The rooms are cheerfully decorated but have no private baths. They all have telephones. All but three have the conventional, low, single bed. The section has a special art room. No doors ever are locked. There are two nurses on duty during the day and one at night. Rarely has a patient ever had a special nurse and if so, only for a short period. All types of patients have been treated including schizophrenics, manic depressives, and psychoneurotics. Ad-

ditionally, those suffering psychosomatic conditions, alcoholics, drug addicts, and even patients with cerebral arteriosclerosis and senile dementia of the milder degree have been treated. No cases ever have been excluded by reason of diagnosis alone. In selecting patients, our staff has had to exercise some care to assure that we have not had too many cases of one type or too many extremely disturbed patients at a time. We find that the patient morale of the floor can tolerate about 2 patients in 12 who are quite sick emotionally, but when the number rises much above this the total effect is not good.

The therapeutic team of our service consists of five psychiatric nurses, two psychiatric residents, two adjunctive therapists to run the art–occupational therapy program, an elderly housekeeper, and the director of the service. As good management of patients requires training and much skill, the residents preferably are in their late second or third year. The average length of a patient's stay has been 10 days although some have stayed as long as three months.

Many factors contribute to the success of treatment, but certainly high on the list is teamwork and more teamwork. This means a rapid study of the patient, physically and emotionally, and a transmission to all personnel who have any contact with him of the nature of the patient's problem. History is supplemented by contact with relatives, and good rapport is maintained with relatives and the family physician. A consistent effort has been made to avoid all unconstructive things associated with the word "custodial." Every effort is made to have the patient feel that the uniqueness of his problem is the concern of several people. This is not an easy feat on a 24 hour basis and we certainly do not maintain that we always have succeeded, but we have tried to approximate this goal as nearly as possible.

VARIED TREATMENTS USED

Every patient who comes in is evaluated in terms of the ways his anxiety is expressing itself and the ego strength he possesses with which to gain insight and make new adjustments. We evaluate what needs he currently is fulfilling with symptoms which could be fulfilled more healthfully in other ways and which, therefore, could relieve anxiety. After making this initial evaluation, we prescribe an attitude and approach that all members of the team shall take toward the patient, so that all of his contacts theoretically tend to fulfill his needs.

Art therapy is used in two ways. First, we consider our art therapists as members of our general phychiatric team. Second, we prescribe certain activities for the patients in our art and occupational therapy program, carefully selecting them so that they will meet the needs of the patient which he is currently fulfilling with symptoms in the hope that the activity then will come to have a double meaning for the patient: (1) relief of anxiety and tension and (2) fulfillment of needs. This activity actually serves as a vehicle for the relationship between the patient and the occupational therapist who participates on the team in the same way that the nurses do, and not as a therapist probing the unconscious.

We give our patients great latitude. Visitors are welcome; patients are free to come and go almost as they please. We try to evaluate each of these actions or freedoms of the patient in terms of what it will mean to the course of his treatment. When we feel that it can have therapeutic value or effect, we encourage it. When the activity is with members of the family, we attempt to confer with them prior to the activity so that it will have maximum therapeutic value.

It is interesting to note that many of our patients are referred to us by general practitioners, internists and surgeons. As we work with the patient, we also like to work with the referring physician, keeping him adequately posted. When it is time for the patient to leave, we like to refer the patient back to the referring physician, and when possible assist him in continuing and completing the rest of the patient's psychiatric treatment. If we feel, along with the referring physician, that the patient needs the continued help of the psychotherapist, we prefer to work out details with the referring physician rather than do it ourselves. This helps the average general practitioner to see more clearly what we are trying to do.

An internist examines each patient who is admitted to our section. In one six weeks period, 2 patients were found to have, in addition to their psychiatric problem, malignancies. In these 2 cases the patients were transferred to the surgical service for appropriate surgical care. The psychiatric team continued to see the patients daily and to work with them while they underwent surgical procedure.

OTHER TREATMENTS

Perhaps the most impressive comment we can make about drug therapy is that we use little sedation. This is particularly interesting at this time when so many general practitioners and therapists are using large doses of barbiturates, stimulants and tranquilizers. We find that with the appropriate attitude and approach, much less medication is needed. We frequently judge that our attitude and approach to a patient is wrong by the fact that the patient continues to need sedation to deal with his feelings, rather than being calmed by our "attitude" treatment. It seems important to stress that although we rou-

tinely allow the patients to have night sedation, the average dosage for all of our patients is equivalent to about a grain and a half of Seconal or Nembutal. We have used Thorazine on 3 patients who were fairly disturbed, but in these patients we saw no particularly helpful effect from the drug. One patient had a severe leukopenia, and Thorazine had to be stopped. It is interesting to note that when this particular patient was given Thorazine, her motility was slowed markedly and her fantasy life and affects became much more intense. We will continue to use these drugs when we feel they are indicated, and would like nothing better than to find one that really helps.

Only occasionally do we use electroshock treatment. Our case selection is so extremely critical that we do not use it prior to a trial of psychotherapy, and then only in selected cases of depression. The number of electroshock treatments that we use in a series actually is very low, and we judge the length of shock treatments according to the response of the patients. All shock treatments given on the inpatients are done with thorough sedation of the patient prior to the shock. The treatment is preceded, accompanied, and followed by the constant use of oxygen and the adjunctive use of succinylcholine. An anesthetist always is present. We do not use shock to control the behavior (aggressiveness) of patients because it has been our experience that with the appropriate psychotherapeutic approach of the doctors and all the members of the team, patients who are quite disturbed can be handled on the open unit and frequently can be quieted with relative ease.

We believe that a psychiatric unit in a general hospital, mainly utilizing the psychotherapeutic approach, solves many problems for the psychiatrist, referring colleagues, and patient. The patient in such a unit can be treated in a primarily medical atmosphere and then returned to the referring physician. It is in this kind of hospitalization that a great deal can be done to help the patient rather quickly. A friendly environment of interested, sympathetic people and a therapeutic plan in which everyone joins is important. Such a plan must include all we know; it can help the patient understand the etiologic importance of current stress as well as the early life stresses which conditioned him to reactions of mental sickness. Most people who are made to understand, in a kindly way, the fact that inappropriate interests and values are making them ill will try as rapidly as possible to get well.

CASE HISTORY

Mrs. M. C. was a 62 year old widow with a married son of 40 and a married daughter of 22. She was admitted to the psychosomatic service of Temple University Hospital in September, 1955, as a transfer from the private medical service. She had been admitted to the hospital 10 days earlier for evaluation of intractible chronic headaches.

The immediate present illness showed that for six months she had been so totally incapacitated with headaches that "she could not go out," "got no relief from any medication," "was spending more than $50 per month for medication which gave no relief," "was seriously disrupting her son's marriage and family life as well as her young daughter's new marriage of nine months," "was paying more than $200 per month local doctor bills," "could not read, write, telephone, or watch television because of headaches," and had alienated all of her old friends because of her total preoccupation with herself. She also was unable to travel alone.

Her children were almost as frantic about the patient as she was about herself. She could not talk on any subject for more than a few minutes before beginning to talk about her pain, her suffering, and her numerous medications. She had been fairly seriously depressed since her medical admission, because histamine, upon which she had placed magical hopes, had failed to relieve her headaches. She was so pitiful, preoccupied, and withdrawn that her picture looked almost psychotic.

All physical and laboratory studies were normal.

When the patient was transferred to the psychiatric service, her internist continued to work with our treatment team. First, all but one innocuous medication was withdrawn. The first week's evaluation was devoted to obtaining a history from the patient and her two children, limiting all visiting, giving her constant team attention and company and allowing her to stay in bed, and giving her a psychotherapeutic interview every time she asked for medication. In these interviews, it was pointed out to her how she was trying to mother and do things for other patients, and that she always talked about herself and disrupted any group she entered. She rapidly antagonized other patients until they avoided her, and when they did so, she tried to "buy" them and be extra nice for a few minutes to get back their attention.

Two daily conferences between all unit personnel made such therapeutic treatment possible so that by the end of one week the patient clearly saw how she needed care and attention, how angry she was, and how she was dealing with these needs and her martyrdom. By the end of one week she had had the experience of aborting two headaches through psychotherapeutic interviews when she initially had wanted medication. This was possible only because of constant team communication so that (1) we could fulfill the needs she previously had been filling with symptoms, (2) she was unable to play one of the members of the team against the other, (3) the members of the team constantly could replenish one another's depleted reserves after any contact with the patient and thus prevent our attacking and rejecting her, and (4) the therapeutic team knew every detail of her life and were trained to help her.

At the end of one week the case was evaluated at staff conference and a definite treatment plan was worked out. Daily psychotherapy with a therapist was recommended, with a staff administrative psychiatrist also seeing her daily for one hour and integrating the larger teamwork.

Her history revealed she was the fifth of seven children of European parents. She and her family came to this country when she was 11. All of the family worked except the mother, who ran the home. At one time, the father had serious injuries which disabled him and the mother a disabling illness, but both recovered in time to continue to head the family and take care of the children. The patient's education was limited to six grades, and she then worked in mills where she was successful and popular. One younger brother was hunchbacked and feebleminded, and was a great

family concern. An older brother remained a major figure to whom the patient could turn.

At age 18 she married a driving, ambitious man of 22 with whom she lived until his death four years before her illness. He apparently was a generous, paternal man who became a wealthy, successful construction builder but lost everything in the depression. When he died, he left his wife a generous monthly income from investments in substantial insurance trusts. He so overprotected his wife that she never worked. Even at home he and a son did all the heavy work. She knew nothing of her husband's business, did not understand how a bank account or checking account worked. Her son was forced to continue the father's role because of the patient's helpless unwillingness and incapacity to assume responsibility. Following her husband's death, she became increasingly sick, slowly developing the admission picture with a constricting phobia due to the fear of fainting whenever she was out of her home without her son or daughter. Her husband died of a cerebral vascular accident in the patient's presence after 10 years of family concern over his prostatic malignancy, which had been surgically removed.

Following the death of her husband, the patient lived in her apartment with her daughter. Her son, his wife, and two children lived 80 miles away where he was a college professor, but the son saw his mother weekly. The daughter completed high school, worked, and lived with the mother until she met and married a man after a short courtship. There were mild maternal protests over the marriage, but the daughter asserted herself, married, and moved to her own home 30 miles away. She saw her mother about twice a week.

In January, 1955, the patient went to Florida for a six weeks' vacation but promptly developed vertigo, an increase in headaches, and eye pain and returned home. A diagnosis of acute glaucoma in the right eye was made and surgery was performed immediately. The daughter nursed her mother for four weeks and then returned to her husband. The next week it was thought the mother had acute glaucoma in the left eye. Surgery was not performed, and the condition passed away in 24 hours. About this time the daughter announced her pregnancy, and the mother's invalidism markedly increased with constant demands that she be taken into the daughter's home. It generally was agreed by both the son and the daughter that their mother now was an impossible person to live with.

Psychotherapy rapidly led to an emotional discussion of the following life areas in their listed order with a surprising clarity of thinking for a 62 year old woman:

1. She felt lonely and lost without her husband to take care of her.

2. Her husband's illness with cancer 10 years before was recalled. She relived the experience of hearing the diagnosing physician dramatically describe the size of her husband's tumor by pulling a book from the bookcase and opening it on his desk. At that point, she had fainted and fallen in the doctor's office. Vertigo and fear of fainting progressed as she daily commuted 90 miles to her husband's bedside, and by the time he was discharged from the hospital, she was unable to go out alone because of her fear of fainting. At that time, she also developed an inability to read even telephone numbers or mail. Her family failed to realize this at the time but later confirmed it. This led to further psychotherapeutic work in which she related her vertigo, fear of fainting, and visual difficulties to: (a) her father's death due to a cardiovascular accident when he dropped dead on the way from the bathroom, (b) her mother falling dead of a heart attack, (c) her husband falling dead of a cardiovascular accident, (d) as a child, seeing both her mother and her father fall and sustain serious injuries at separate times when she was alone with them. Working through these problems enabled her to start watching television programs without headaches, read newspapers, and gain confidence and acceptance of psychotherapy as she began to go out alone for the first time in years.

3. The very unsatisfying relationship with her daughter then came into discussion. This led to the revelation that in childhood the girl showed a slight scoliosis and the mother feared that the child would be like her own defective brother. The mother mobilized much early medical attention and overconcern toward the daughter and this led to an early breakdown of the mother-daughter relationship. This was perhaps reinforced by the mother's rivalry with her daughter for her husband's affection and some repetition of her earliest sibling rivalry, but this area was not gone into in psychotherapy.

4. The work in the area of her relationship to her daughter eventually led to almost total resolution of her headaches without going back deeply into her own sibling and oedipal problems and rivalry, and she began to deal with similar feelings toward her son-in-law and daughter-in-law.

By this time, five weeks after admission, the patient was ready to leave the hospital and return home to work in community activities and resume life. She had a mild symptomatic regression when she learned she would have to relinquish her hospital psychiatrist and work with a new one. The transition was begun while she was still in the hospital and she left symptom-free.

This case illustrates many things but especially important are (a) the magnitude of emotional need, (b) the value of detailed history taking in pointing up needs to the patient, (c) the administration of medication as needed in terms of interpersonal relationship, (d) the opportunity provided by inpatient treatment to enforce a weaning of the patient away from the pathologic emotional relationships to her children, and (e) the opportunity to demonstrate to her that she had latent ego strengths which could be cultivated for emotional and physiologic health.

SUMMARY

To summarize, an "open" psychiatric section in a general hospital offers unique opportunities for cure and treatment of disturbed patients.

In psychosomatic cases in which organic and psychic factors need to be treated by an integrated team under the supervision and direction of specially trained psychiatrists much can be accomplished.

Patients who are in a disruptive environment or unable to adjust to office psychotherapy can come for a short period of consultation, evaluation, formulation, and repair of the ego leading to return of outpatient psychotherapy on a more successful basis. All this is accomplished without too great a regression or loss of self-respect—and in a short time.

Patients whose previous adjustment has been satisfactory but who, because of personality crisis or overwhelming stress, react with greatly increased tension and personality disruption, whether these acute episodes are neurotic or psychotic in acute manifestation, also can be helped. This type of case is on the in-

crease and is becoming one of the most common acute stress reactions we see. In this instance a section becomes the psychic "accident dispensary."

Patients in whom intense fractional psychotherapy would be suggested either by specific indication or because they live out of town and can do best with a big dose of psychotherapy at intervals fare well in open psychiatric sections.

The availability of an integrated, cooperating team of physicians, nurses, and ancillary personnel is becoming increasingly effective. It offers a more varied and more constant personal security and observation 24 hours a day by a trained therapeutic team. This permits more rapid and thorough observation of the patient, his conflict, his behavior, his sensitivities, and his defenses.

It can be seen then that this type of treatment is time consuming and expensive in time and personnel but necessary and warranted when we remind ourselves how very expensive untreated mental and psychosomatic illness can be to the family, community, and nation.

♦ Dr. English, 3401 N. Broad St., Philadelphia 40.

Leprosy in Texas

Risk of Contracting The Disease in the Household

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Austin, Texas

THE USUAL measures for the control of the transmission of leprosy leave much to be desired as far as efficiency and ease of application are concerned. Between onset and discovery of the disease, there frequently is an interval of several important years during which specific measures to prevent transmission cannot play a part. After the disease is discovered the patient finds himself in prolonged isolation which is almost impossible to maintain. It is a severe trial to a social being, physically, mentally and financially. Peculiar characteristics of the disease, lack of pain, slow and irregular course, and lack of obvious evidence of contagiousness dull the patient's concern and fortify his desire to forget about restrictions. It is, therefore, even more essential in leprosy than in other infectious diseases to examine these measures critically and to determine their epidemiological validity.

In 1949 the Leonard Wood Memorial (American Leprosy Foundation) in cooperation with the Texas State Department of Health and the United States Public Health Service established an epidemiological unit with headquarters in Corpus Christi under my direction. This was made part of a larger organization designed to study the problem in the United States, and similar units were sponsored by the Public Health Service in Louisiana, Florida, and California. The Public Health Service Hospital at Carville, La. (National Leprosarium), participated from the outset. Coordination of all work was achieved by the formation of a Leprosy Branch in the Epidemiology Division of the Communicable Disease Center, Atlanta, Ga.

Dr. Fred C. Kluth was associate epidemiologist at the Leonard Wood Memorial (American Leprosy Foundation) with his headquarters in Corpus Christi when he presented this paper before the Texas Medical Association's Section on Public Health, April 24, 1956, in Galveston.

Transmission of leprosy in Texas is of interest because cases of the disease occur in the state persistently but in small numbers. It is possible that the factors responsible for this low occurrence may be used to control this disease. In this paper, transmission of the disease in the household in Texas is examined.

Although leprosy generally is considered a communicable disease transmitted by person to person contact, this theory has not been firmly established. The frequent occurrence of the disease in more than one member of a household, the absence of the disease in children separated at birth from leprous mothers, and the spread of the disease when introduced into the population of isolated islands in the Pacific all attest to the communicability of this disease from the patient to healthy persons. The artificial inoculation of laboratory animals with bacillus-containing tissues, however, has not been followed by the development of the disease. Until a susceptible animal is found, experimental support for any theory of transmission cannot be obtained.

In the middle ages leprosy was regarded as highly contagious. About 1850, however, several workers, including Danielssen and Boeck, invoked hereditary origin as a more satisfactory explanation of multiple cases in persons genetically related. The hereditary theory, according to Rogers and Muir,[11] stimulated many workers to present evidence supporting communicability, among them Drognat-Landré,[5] who

wrote in 1869 before the discovery of the leprosy bacillus. He pointed out that in Surinam alone at least 12 European children apparently contracted leprosy through contact with servants, wet nurses, and playmates having the disease. Hansen[8] found that in fewer than one-fourth of leprosy patients were there antecedent cases in the direct line of ascent.

Rogers and Muir[11] stated that wherever careful study has been made of a relatively large number of patients, prior cases in one or more relatives or other close associates have been found. More recently Chung-Hoon[2] has reported that 20 per cent of patients in Hawaii gave a history of previous contact. In Florida, Badger[1] reported that of 99 families in which leprosy had occurred, 17 were multiple case families. Guinto, Rodriguez, Doull, and De Guia in the Philippines[7] reported that in 26 per cent of 104 patients there had been a previous case in the household.

In Texas, a recent report[9] showed that of 395 patients, 27.5 per cent reported some kind of association with a previous patient. For 21.1 per cent this was household contact.

Do Páteo[3] reported that from 1924 to 1945 in Brazil among 72,079 household contacts 796, or 1.1 per cent, were found to have leprosy. Oteiza Setien, Ibarra Perez, and Gonzalez Prendes[10] noted that from 1943 to 1946 in Cuba among 1346 household contacts 45, or 3.4 per cent, were found to have the disease.

Chapin was the first to use family attack rates as a measure of infectiousness, according to Doull,[4] but he used them only with acute diseases of short incubation period in which a large proportion of secondary cases occurred within a brief period. Weinberg[12] used a life table method in the study of the mortality of children of tuberculous parents in Stuttgart, Germany. This procedure, which permits more convenient estimation of the exposed population by counting person years of exposure rather than persons, was further modified by Frost[6] in field studies of tuberculosis in the United States.

Guinto, Rodriguez, Doull, and De Guia[7] have made extensive use of this method in their long term (1933 to the present) study of leprosy in two small communities near Cebu, Philippines. These studies show that the risk of acquiring leprosy in households in which a case of lepromatous leprosy is known to exist is six times that in households without a case of leprosy, 4.38 per 1,000 person years and 0.75 respectively.

To collect the material reported here I was notified each time a new case of leprosy was reported to the Texas State Department of Health and usually proceded to the local health unit acting as epidemiologist for the State Department. When necessary, I confirmed the diagnosis, assisted in arranging isolation either at the Public Health Service Hospital, Carville, La., or at home. Local physicians assumed responsibility for treatment of those remaining at home. On investigation the patients were asked to recall the different places they had lived, the time they lived in these places, and the names of the persons who lived in the household with them and shared the same table for more than one month. Of patients investigated at the time of report, 102 (74 lepromatous and 28 nonlepromatous) gave a complete listing of the family associates. Of patients already known at the time the study was started, 101 (87 lepromatous and 14 nonlepromatous) also gave complete listing of family associates. Information about other household associates, such as roomers and employees, was almost always sketchy and incomplete. These interviews yielded a list of 2,191 household contacts, 1,696 exposed to lepromatous leprosy and 495 to nonlepromatous leprosy.

All epidemiological interviews were carried out in a voluntary fashion with the understanding that any examination made of family contacts would be effected through official local health agencies. Local health unit personnel saw that there was a suitable place for examination, invited the household contacts to consult their own physicians or to see me, explained to the contacts the necessity for examination, and persuaded reluctant persons to be examined.

Contacts were asked to undress in such a way that all parts of the skin including the soles of the feet, but excluding the genitalia, could be seen. The cornea and the anterior portion of the nasal septum were inspected, superficial nerves palpated, and a rough test made for sensation of light touch and pain in the extremities of those old enough to cooperate. Smears from the skin and the mucous membrane were not taken unless suspected lesions were present because many persons object to this procedure, and it was thought that repeated yearly examinations would be more important than one examination with skin smears.

Of the 1,696 contacts to lepromatous leprosy, 921 were not available because they did not live in the state, they had died, or were excluded for other reasons. Of the 775 contacts searched for 70 could not be located. Of the 705 located, 492, or 70 per cent, were examined and 12 cases were found (2.4 per cent). Two additional cases were found in household contacts who had consulted physicians because of their symptoms and after their names were listed, but before contact examination could be arranged. Leprosy was suspected but could not definitely be established in 7 other contacts. Among the above listed household contacts there were 26 patients (21 lepromatous and 5 nonlepromatous) whose disease was discovered before my investigation of the family, and the discovery of these cases usually had been

made without knowledge of prior exposure to leprosy. Thus of 1,522* persons known to have lived in households exposed to lepromatous leprosy, a minimum of 40 contracted leprosy (2.6 per cent).

Of the 12 patients found as a result of household contact examination, in 9 the diagnosis was made or suspected at the first examination and in 3 the first examination showed no definite signs of the disease, but subsequent ones revealed it. In the 12 patients found, the disease was lepromatous in 4 and nonlepromatous in 8.

CASE REPORTS

Following are examples of the chain of events leading to the discovery of a case among household contacts.

CASE 1.—A (white female) was born in 1938 in Jim Hogg County. Her father, B, had onset of lepromatous leprosy a year before his daughter's birth, and went to the National Leprosarium when his daughter was 3 years of age. After six months at the hospital, he left without permission and moved with his family first to Corpus Christi, then to San Patricio County, and later to Aransas County, where he remained until May, 1953. In that month a neighbor complained to the local health officer about the unusual appearance of the father's face, and the case was rediscovered. A, now 15 years of age, was examined with her mother and three siblings. A few months earlier a lump had appeared and ulcerated on her left elbow. Examination showed a few crusts on the nasal septum, anesthesia of the forearms, and thinning of the lateral portion of the eyebrows. Smears taken from the skin showed acid-fast bacilli and globi. The mother and siblings have been examined on several subsequent occasions but have shown no evidence of leprosy.

CASE 2.—C (white male) was born in DeWitt County in 1905, and lived with his parents and six siblings until he was married in 1929. Two of his sisters developed leprosy, apparently after they left the household of their parents. D (white female), the first one to be reported, left her parents in 1930 to reside in Houston, where onset of lepromatous leprosy took place in 1944. E (white female), the second case to be reported, left in 1930 to reside in Houston where onset of nonlepromatous leprosy occurred in 1939. C lived in DeWitt County with his wife and children until 1939 when they moved to Corpus Christi. In 1948 E, whose nonlepromatous leprosy was active, moved to Corpus Christi to live in the C household for about a year. C was examined in May, 1950, and June, 1951, and no evidence of leprosy was found. In May, 1953, he noticed red macules on the extremities, some of which showed clearing in the center. At that time he was asked to report for routine examination, but chose to go to a local dermatologist instead. Though he did not tell the dermatologist that he was a contact, leprosy was suspected. Anesthesia was found in the lesions but no acid-fast bacilli. The first biopsy showed only chronic inflammation, but a later one revealed tubercles and giant cells. The wife and eight children of C have been examined several times and no definite evidence of leprosy has been found.

Excludes 174 who never lived in Texas.

Of the 495 contacts exposed to nonlepromatous leprosy, 303 were not available because they did not live in the state, had died, or were excluded for some other reason. Of the 192 searched for, 9 could not be located. Of the 183 contacts located, 114 (62.3 per cent) took the examination and 1 was found to have leprosy on the first examination. The disease in this person apparently had earlier onset than the first one reported from this household.

A number of previously unknown cases were discovered by local health units as a by-product of the efforts to bring household contacts to examination. There were 107 persons, relatives of patients and living in close but not household contact, who requested and received examination. Among these, 2 cases were found, 1 lepromatous and 1 nonlepromatous. Public health nurses in other routine work brought in a number of persons in whom they suspected leprosy; among these 3 cases were found, 2 lepromatous and 1 nonlepromatous.

No cases were found among 261 persons exposed to lepromatous leprosy in a state penitentiary and a state mental hospital.

As in tuberculosis, search for cases should include not only examination of those present in the household at the time the case is reported, but also of those previously in the household; and if the patient is an adult, the parents and siblings who live elsewhere. Of 1,522 persons listed as household contacts to lepromatous leprosy, 560 were in the household at the time the disease was reported, and 962 had lived with the patient some time previously (table 1). Of the 560 persons in the household at report,

TABLE 1.—*Results of Examination of Persons Exposed in the Household to Lepromatous Leprosy, Whether or Not They Were in the Household When the Case Was Reported.*

	In Household at Time of Report	In Household Previous to Report Only	Total
Number of persons listed	560	962	1,522
Number examined	337	155	492
Cases found	6	8	14
% of cases among persons examined	1.78	5.16	2.84

337 were examined and 6 new cases were found (1.8 per cent) (2 lepromatous and 4 nonlepromatous). Of the 962 persons previously in the household, 155 were examined and 8* cases were found (5.2 per cent) (3 lepromatous and 5 nonlepromatous).

The increased risk of contracting leprosy in the household may antedate the appearance of the first signs of the disease recalled by the patient. Of 962 persons who had lived in the household some time

Includes the 2 cases listed as contacts, but found because a physician was consulted about symptoms.

before the disease was reported, but were not present at the time of report, 158 had lived with the patient after signs of the disease were noted. Of these 158 persons, 39 were examined and 1 nonlepromatous case was found. If this group is added to the 337 in the household at report of the case, there were 376 persons exposed after signs of the disease had been observed and then examined. Among these, 7 cases were found (1.9 per cent). Of the 804 who had lived in the household only in the period before signs of the disease were noted, 116 were examined and 7 cases were found (6.0 per cent). Thus it appears that case finding efforts should be directed to all persons who have at any time been members of a household in which the patient has lived.

Though a larger number of female contacts were examined than of male, the percentage found with the disease in both sexes was about the same. In similar studies in Cebu, Philippines,[7] an excess of males has been observed, especially in the lepromatous type. The number of persons observed in the Texas study is too small to permit the conclusion that the two areas differ in this respect. Of the 1,522 contacts to lepromatous leprosy listed, 727 were males and 795 females (table 2). Of the 727 males, 210 were examined and 6 cases were found (2.9 per cent) (3 lepromatous and 3 nonlepromatous). Of 795 females, 282 were examined and 8 cases were found (2.8 per cent) (2 lepromatous and 6 nonlepromatous). The total of reported cases in Texas has shown the usual excess in males.

TABLE 2.—*Results by Sex of the Examination of Persons Exposed in the Household to Lepromatous Leprosy.*

	Male	Female	Total
Number of persons listed	727	795	1,522
Number examined	210	282	492
Cases found	6	8	14
% of cases among persons examined	2.86	2.84	2.84

Most of the household contacts were white persons of Mexican birth or descent. There were too few Negroes and too few white persons not of Mexican descent to warrant separate tabulations.

Although a smaller proportion of the older contacts reported for examination than did younger ones, a larger percentage of cases was found in the older group. In the age group 1 month to 19 years, 192 were examined and 3 cases were found (1.6 per cent) (1 lepromatous and 2 nonlepromatous) (table 3); 20 to 69 years, 276 were examined and 11 cases were found (4.0 per cent) (4 lepromatous and 7 nonlepromatous); 70 years and over, 24 were examined and no cases were found. The relatively high percentage of cases in the age group 20 to 69 years suggests that greater efforts should be made to examine contacts of these ages.

It was anticipated that patients discovered through contact investigation would be younger than those coming to official attention through ordinary reporting. This was the case, but the difference was smaller than was expected.

TABLE 3.—*Results (by Age at Last Examination) of the Examination of Persons Exposed in the Household to Lepromatous Leprosy.*

	Age Group			
	1 mo. 19 yr.	20-69 yr.	70 yr. & over	Total
Number of persons examined	192	276	24	492
Cases found	3	11	0	14
% of cases among persons examined	1.56	3.98	0.0	2.84

A rough measure of the possible protection against leprosy of infection with tuberculosis was made, and no such protection was found. Of 492 persons who were examined and lived in households with a case of lepromatous leprosy, 55 also lived in households which had a case of pulmonary tuberculosis and 437 lived in households with no known case of pulmonary tuberculosis. Of the 55 persons exposed to both diseases, 2 cases of leprosy were found (3.6 per cent) (1 lepromatous and 1 nonlepromatous). Of the 437 persons not exposed to known tuberculosis, 12, or 2.7 per cent, were found to have leprosy (4 lepromatous and 8 nonlepromatous). These data, although very limited, offer no support to the theory that infection with tuberculosis (or perhaps BCG vaccination) will prevent lepromatous leprosy.

The contacts in the family who have lived longest and closest to the patient apparently have the greatest risk of infection. Among 146 persons, parents or siblings of a lepromatous patient, who were examined, 7 cases were found (4.8 per cent) (3 lepromatous and 4 nonlepromatous). Among 353 household contacts who had other family relationship, 7 cases were found (2.0 per cent) (2 lepromatous and 5 nonlepromatous).

To compare the experience in Texas with that in Cebu, Philippines, reported by Guinto, Rodriguez, Doull, and De Guia,[7] the group of contacts in the household of the patient at the time the disease was discovered was studied.* There were 574 contacts exposed to the lepromatous type. Of these 337 were examined and 6 cases were found (1.8 per cent). From the time these contacts are presumed to have had household exposure to manifest leprosy until the last examination of each contact, they lived a total of 2,686 person years. The 6 cases discovered,

**Note that the proportion of household contacts examined in Texas was significantly smaller than that examined in Cebu, Philippines.*

therefore, represent an attack rate of 2.23 cases per 1,000 person years. This is less than half the rate for lepromatous households reported for the previously mentioned group in the Philippines, which was 4.38 per 1,000 person years, but is in excess of the rate reported by the same group for other than household exposure, 0.75 per 1,000 person years. Evidently the factors which operate to lower the rate of transmission in the general population of Texas as compared with that in the Philippines operate within the household as well as without (table 4).

TABLE 4.—*Comparison of the Results of Examination of Persons Exposed in the Household to Lepromatous Leprosy and Living in the Household at the Time the Disease Was Reported in Texas and Cebu, Philippines, and the Results of Examination of Persons with No Known Case of Leprosy in the Household in Cebu, Philippines.*

	In household of leprom. case		Not in household of known case
	Texas	Philippines	Philippines
Number of persons examined	337	—	—
Person years of experience	2,686	16,366	233,758
Cases found	6	75	185
Cases per 1,000 person years of experience	2.23	4.38*	0.75*

*These rates are not directly obtainable from the numbers given because adjustment was made for age distribution.

SUMMARY

Since 1949 an epidemiological study of leprosy has been carried on in Texas through the cooperative efforts of the Leonard Wood Memorial, the Texas State Department of Health and the Public Health Service.

A total of 203 cases were investigated to December 31, 1954. In 102 instances the investigations were current. In the others the cases had been reported at intervals since 1930.

A minimum of 40 cases, or 2.6 per cent, are known to have occurred among 1,522 contacts exposed to the lepromatous type. Among 495 persons exposed to nonlepromatous leprosy, only 1 case is known to have occurred.

Among 492 contacts who were examined after exposure to lepromatous leprosy, 14 cases or 2.8 per cent, were detected.

A by-product of the search for cases in household contacts was the finding of 5 cases, previously unsuspected, by local health unit personnel in the course of other work.

The finding of cases among persons who formerly were members of a household in which leprosy occurred indicates that case finding efforts should be directed toward all persons who have been members of any household in which a patient has lived.

A larger proportion of cases was found in examinations of contacts of 20 to 69 years of age (4.0 per cent) than of contacts less than 20 years of age (1.6 per cent).

The risk of contracting leprosy in the household of a lepromatous patient in Texas apparently is only about half that in the Philippines.

Acknowledgments are due James A. Doull, M. D., medical director of the Leonard Wood Memorial, for guidance in preparing this study and paper; to the staffs of the Texas State Department of Health, Public Health Service Hospital, Carville, La., and Communicable Disease Center, Public Health Service, the local health officers and their staffs, and many physicians for assisting in the collection of material for this paper; and to Huldah Bancroft, Ph. D., for assistance in analysis.

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UNIVERSITY OF TEXAS MEDICAL BRANCH

Distinguished guests at the University of Texas Medical Branch, Galveston, during the past month have been Dr. Molly Harrower, clinical psychologist, New York; Dr. E. N. Willmer, of the Physiological Laboratory, Cambridge University, England; Mrs. I. Simon-Reuss of the Radio-Therapeutics Department, Cambridge University, England; Dr. Pierre Graber, Pasteur Institute, Paris; Dr. Charles E. Lumsden, who holds the Chair of Pathology, Leeds, England; and Dr. A. Z. Chevez, from the Instituto Nacionale de Cardiologia, Mexico.

Carcinoma of the Uterine Cervix

A Critical Review Of the Current Status Of Treatment

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THE PURPOSE of this paper is to review the present status of treatment of carcinoma of the uterine cervix and to outline recommended treatment for the various stages of this disease in the light of current literature and our own experience. For the following reasons, we believe this review is warranted at this time.

We believe that pathologic findings on specimens removed during surgery for treatment of carcinoma of the cervix have not been interpreted completely. Particularly is this true in accurately assigning credit to the treatment method responsible for cure and in evaluating the necessity for surgery.

Dr. Ralph S. Clayton presented this paper for the Section on Radiology at the 1956 annual session of the Texas Medical Association in Galveston on April 23.

Published data are reinterpreted to correlate correctly survival with the treatment method actually responsible for cure. Surgery after adequate irradiation is not indicated as a routine procedure. Proper treatment methods which provide the best chance for cure and the lowest mortality and morbidity, with least functional impairment and cost, are outlined by stages.

It is pertinent at this time to reemphasize the reasons why reports of experimental surgical series cannot be compared with series treated by irradiation.

Concerning treatment we shall emphasize the following: (1) why surgery is not justified as a routine procedure after adequate irradiation; (2) why cancer of the cervix proven to be resistant to radiation should be treated by radical surgery without delay; and (3) why retreatment by irradiation should be done more often for recurrent or reoccurrent cancer. The term "recurrent" is applied to the clinical reappearance of a cancer, which some authors call persistence of the tumor; "reoccurrent" refers to the development of a separate, completely new cancer.

Treatment will be recommended under the following clinical classifications:

1. International classification of extent of disease by stages:

Stage 0—Carcinoma in situ, also known as preinvasive carcinoma, intraepithelial carcinoma, and similar conditions.
Stage I—The carcinoma is strictly confined to the cervix.
Stage II—The carcinoma extends beyond the cervix, but has not reached the pelvic wall. The carcinoma involves the vagina, but not the lower third.
Stage III—The carcinoma has reached the pelvic wall. On rectal examination no "cancer-free" space is found between the tumor and the pelvic wall. The carcinoma involves the lower third of the vagina.
Stage IV—The carcinoma involves the bladder or the rectum, or both, or has extended beyond the limits previously described.

2. Cancer resistant to irradiation.
3. Cancer recurrent or reoccurrent after irradiation.
4. Cancer recurrent after surgery.

REINTERPRETATION OF DATA

It is our impression that a full and correct evaluation of the significance of the pathologic findings on the specimen removed at operation has not been sufficiently emphasized in the surgical reports. As a result, we believe that sometimes a cure is credited to a method not actually responsible for the cure.

It is important to note whether or not a surgical procedure removed cancer from the patient. The ability of surgery to cure should be determined only by results obtained in groups showing cancer in the operative specimen. If viable cancer is demonstrated in the surgical specimen and the patient survives, it reasonably may be considered that surgery was responsible for the cure. On the other hand, if the surgical specimen does not show cancer, then the operation cannot be held responsible for cure. Finally, if a patient dies of cancer after surgery, it is immaterial whether or not the surgical specimen showed cancer, for surgery did not cure this patient.

Therefore, when a series is evaluated, all those survivors whose surgical specimens were negative for cancer should be excluded from the group of patients whose cure is to be attributed to surgery. This is usually not done in most surgical series thus far reported.

There are several possible causes for failure to find cancer in an operative specimen. (1) In early cases, when deep or multiple biopsies are necessary to prove

invasiveness of the cancer, the biopsy may remove all of the tumor. (2) When preoperative irradiation has been given, the cervix and pelvic tissues removed often may be free of demonstrable tumor, provided sufficient time has elapsed for the tumor to disappear. (3) Though present, the pathologic examination occasionally may fail to show the tumor.

The following data indicate that biopsy may cure patients with very early lesions. Of 26 patients[2] with invasive cancer proved by biopsy, who had not received preoperative irradiation therapy, the surgical specimens were negative in 8 cases. In another group of 46 patients with proven carcinoma in situ, Scott and Reagan[12] showed that after deep cervical cone biopsy, the surgical specimen was free of abnormal epithelium in 15 cases, showed only suspicious findings not sufficient for a diagnosis of carcinoma in situ in 16 cases, and still showed definite carcinoma in situ in only 15 patients.

We do not suggest that deep cervical cone biopsy or even amputation of the cervix is adequate treatment for either carcinoma in situ or early stage I disease. However, we do believe that the surgical specimen findings should be the basis of evaluating the effectiveness of surgery in cancer of the cervix.

The possibility of cure by biopsy applies with equal force to early stage I cases treated by irradiation. Study of surgical specimens may provide a correction factor to apply to apparent cure rates from irradiation therapy so that the effectiveness of irradiation as a method of treatment may be more accurately appraised.

In early stages of carcinoma of the cervix, when adequate treatment with radium and roentgen radiation has been given, the surgical specimen removed by radical operation is frequently free of tumor. Available figures[2, 7, 8, 11] indicate that about 80 per cent of the surgical specimens from a group of patients so treated will not show tumor on pathologic examination.

It is generally known that routine pathologic examination of surgical specimens may fail to demonstrate tumor, even though it is present. The cost of serial sections is prohibitive and the random sampling usually employed may miss the tumor.

Another group of patients should be excluded from those whose survival is attributed to surgery. These are patients who developed recurrent cancer after surgery and who were cured by subsequent irradiation. Of 14 patients with postsurgical recurrence who were treated by irradiation, Meigs reported 2 survived five years, yet these 2 patients are included in the 75 per cent over-all survivors in such a manner as to imply they were cured by surgery.[7]

The following example will illustrate the effect on reported cure rate of excluding patients whose survival was due to some other cause than surgery. Of the 75 survivors of a group of 100 surgically treated patients, 17 provided surgical specimens which were negative for tumor.[7] These patients, then, were apparently cured by either biopsy or irradiation before radical surgery. Two other patients survived because of irradiation, which was given for recurrence after the radical operation. Thus, a total of 19 patients should be excluded from the group whose cures are to be attributed to surgery. This leaves 56 patients of the 100 who apparently were cured by surgery, a cure rate of 56 per cent—not 75 per cent.

SELECTION OF TREATMENT METHOD

In the treatment of cancer, the method selected should meet the following criteria in descending order of importance: (1) provide the best chance of cure, (2) be accompanied by the lowest mortality risk, (3) be accompanied by the least discomfort and lowest risk of complications, and (4) cost as little as possible. Table 1 outlines our recommended treatment for carcinoma of the cervix in the various stages.

TABLE 1.—*Recommended Treatment for Carcinoma of the Cervix.*

Stage	Recommended Treatment
International stage 0	Panhysterectomy with wide vaginal cuff.
International stage I	Irradiation.
International stage II	Irradiation.
International stage III	Irradiation, or superradical surgery where available.
International stage IV	Irradiation, or superradical surgery where available.
Radiation-resistant cancer	Radical surgery in stage I and II; superradical surgery in stage III and IV.
Recurrent or reoccurrent cancer after irradiation	Reirradiation; surgery as last resort.
Recurrent cancer after surgery	Irradiation or surgery may be used, depending on individual factors.

The choice of radical surgery as primary treatment for invasive cancer of the cervix cannot be justified at this time. It must be emphasized that encouraging reports of results of experimental surgery on selected groups of patients under ideal conditions should not be used as the basis for choosing surgery as primary treatment for this disease.

There are no series available which accurately compare the value of radical surgery and irradiation in the treatment of carcinoma of the cervix.[4] In order for two series to be comparable in this regard they must be collected at the same institution during the same period of time, examined and classified by the same group of examiners, and divided equally between the two series by random sample method.

Furthermore, it has not been possible thus far to treat an unselected group by surgery. For example, Brunschwig[1] at Memorial Center in 1947 undertook to operate on all patients presented for treatment. However, the intended surgical procedure could be done in only 65 per cent of the patients. The other 35 per cent were divided as follows: 24 per cent were inoperable either by reason of other disease or by refusal of surgery, and 11 per cent could not be operated on for cure because upon exploration disease was apparent in the aortic lymph nodes.

By contrast, practically all patients presented for treatment can be treated by irradiation. For example, volume 10 of Report of Results of Treatment of Carcinoma of the Uterus[4] shows that 93.4 per cent of patients presented for treatment were given irradiation therapy.

SURGERY FOLLOWING IRRADIATION

We believe that surgery is not indicated as a routine procedure following adequate irradiation therapy. Examination of the surgically removed specimens from patients in stages I and II who have received adequate irradiation preoperatively will fail to show cancer in the majority of cases, provided that sufficient time has elapsed to allow the tumor to disappear. For example, St. Martin[11] reported that the surgical specimens were free of cancer in 42 of a group of 49 patients. Meschan and his associates[8] reported the surgical specimens were free of cancer in 19 of 26 cases, and surgery did not cure any of the 7 patients whose surgical specimens showed cancer. Meigs' series[7] contained only 6 patients who had received a full course of irradiation therapy before operation. Specimens from 5 of these 6 cases showed no cancer.

Of stage I and II patients whose surgical specimens are free of cancer, about 80 per cent survive five years.[6] Since the operation apparently did not remove cancer, it was not responsible for these cures. Irradiation is more likely the agent responsible for cure. Surgery may release cancer cells from irradiation fibrosis and therefore may be responsible for the death of some of the 20 per cent who died.[10]

How successful is surgery in curing those patients showing cancer in the surgical specimen? Graham and Graham[3] surveyed the literature in evaluating the effectiveness of surgery in curing patients with positive lymph node metastases and reported an average cure rate of from 20 to 25 per cent.

In stages I and II patients who are treated adequately with irradiation before surgery, approximately 80 per cent will owe their survival to the irradiation. Of patients showing tumor in the surgical specimen outside the uterus, about 25 per cent are salvaged. Therefore, in a group of 100 patients with early disease who received preoperative irradiation, surgery may be credited with the cure of approximately 5 patients. It appears from these figures that in 95 patients of such a group, the surgery would not be necessary insofar as cure is concerned. On the other hand, mortality from radical surgery ranges between 1 and 11 per cent.[2, 6] For any salvage to occur in this group, the mortality rate must be kept considerably below 5 per cent. Liu and Meigs[6] reported the mortality rate of 1.7 per cent, Kelso[5] reported 3.6 per cent, and Parkland Hospital data for 1944-1953, inclusive,[2] show an operative mortality of 11.5 per cent (table 2).

Morbidity from surgery following adequate irradiation is not always higher than without preoperative irradiation. If vigorous irradiation therapy is given, the morbidity risk is elevated somewhat. It is also important that this surgery be done before the onset of dense fibrosis eight months to a year after irradiation treatment.

Liu and Meigs[6] reported an over-all postoperative complication rate of 24 per cent, including 9 per cent urinary and/or intestinal tract fistulas. Parkland data[2] show a major complication rate of 13 patients out of 35. Of 26 patients who had not received preoperative irradiation, 10 had severe complications. Of 9 patients who had been treated by irradiation, 3 developed complications.

In stage III cases, we believe that adequate radical surgery can probably cure about as many patients as adequate irradiation but that there will be an increased mortality and morbidity risk with surgical treatment.

In stage IV, irradiation is able to salvage, on the average, considerably less than 10 per cent of these unfortunte patients. In stage IV cases, Brunschwig[1] has cured significantly more of these patients by superradical surgery or exenteration than irradiation can cure. However, the hospital mortality in this series was 25 per cent.

Cancer resistant to irradiation must be distinguished from recurrent or reoccurrent cancer. Considerable effort has been made to develop techniques to predict radiation resistance before or during irradiation therapy, but so far no satisfactory method has been developed. Observation, including biopsy, after adequate irradiation is the only method of proving radiation resistance. After irradiation treatment has been completed, disappearance of cancer should occur within two months. If biopsy of the cervix remains consistently positive more than three months after completion of adequate irradiation treatment, the tumor should be considered to be radiation resistant. We believe it would be unwise to reirradiate these

TABLE 2.—*Carcinoma of the Uterine Cervix as Treated at Parkland Hospital, Dallas, 1944-1953, Inclusive.*[a]

RADICAL HYSTERECTOMY AND PELVIC LYMPHADENECTOMY—35 PATIENTS.

	Indication for Operation				
	Primary Treatment Patients	Proven Recurrence Patients	Immediate Postirradiation or Only Clinical Evidence of Recurrence Patients	Total Patients	%
No morbidity	16	2	1	19	54.3
Surgical mortality					
Primary operation	2	0	1	3	8.6
For complication	1	0	0	1	2.9
			Total deaths	4	11.5
Major complications	8	2	3	13	37.1
Surgical specimen					
No tumor found	8	1	4	13	37.1
Tumor cervix only	16	2	0	18	51.5
Tumor beyond cervix	2	1	1	4	11.5
Follow-up (not five years)—32 patients surviving first operation					
Living	17	2	2	21*	
Dead of cancer	3	1	2	6	
Dead postoperative	1			1	
Lost to follow-up	3	1	0	4	
			Total	32	

Average hospital stay

For primary operation	36.5 days per patient
For complications	11.0 days per patient
Total	47.5 days per patient

Major complications—18 patients

Vesicovaginal fistulas	5	Wound evisceration	1
Ureterovaginal fistulas	2	Incisional hernia	1
Pelvic cellulitis abscess	2	Fecal incontinence	1
Neurologic bladder incontinence	4	Hemiplegia	1
Wound hematoma abscess	1		

IRRADIATION TREATMENT—200 PATIENTS.

	No. Patients	%
Moderate or no morbidity	192	96.0
Mortality	0	0.0
Severe complications	8	4.0

Five year survival—110 patients

	No. Treated	No. Surviving	% Surviving
Stage I	16	13	81.2
Stage II	15	6	40.0
Stage III	42	8	18.6
Stage IV	37	2	5.4
Over-all	110	29	26.4

Of 6 patients treated for recurrent cancer after initial treatment elsewhere, 1 survived five years

Average hospital stay

For primary treatment	22.2 days per patient
For complications	.5 days per patient
Total	22.7 days per patient

Severe complications—8 patients

Surgery for lost radium needle	1	Vesicovaginal fistulas	2
Colostomy for rectal stricture	1	Intestinal obstruction	1
Rectovaginal fistulas	2	Skin ulceration, roentgen-ray port	1

From Clayton, R. S.: Carcinoma of Cervix Uteri: Ten Year Study with Comparison of Results of Irradiation and Radical Surgery, in press.

*Patient living after radium therapy for recurrence.

radiation resistant cases so soon after initial irradiation because of the probability of severe complications. These patients are almost certain to die of their disease unless they are immediately subjected to radical surgery.

REIRRADIATION

Most radiotherapists have been reluctant to reirradiate patients for recurrent or reoccurrent cancer if adequate irradiation was given as primary treatment, reasoning that the small chance of curing these patients would be more than offset by the increased risk of complications due to reirradiation. Recently, however, van Herik and Fricke[13] have reported a 15.4 per cent five year survival in a group of 110 patients reirradiated for cancer recurrent after irradiation. There was no mortality, and only a small number of complications developed. Murphy[9] obtained a five year survival of 9 patients in a group of 46 patients. However, of the 32 patients whose disease was not of massive pelvic or extrapelvic type, 9 survived five years. Among the 9 survivors, 4 were morbid including 1 with rectovaginal fistula, 1 with cystitis, and 2 with proctitis.

The favorable results from reirradiation were obtained in those recurrences located away from the pelvic walls, in the central portions of the pelvis. There was no salvage in the group whose recurrence involved the pelvic walls and in the "frozen" pelvis type of growth.

These results compare favorably with those reported from superradical surgery and are accompanied by lower mortality and morbidity risk. We believe that radiotherapists should be willing to assume the risk of the complications involved in view of the benefits likely to be obtained.

On the other hand, when all attempts with irradiation have failed and when it is technically possible to perform superradical surgery, we believe selected patients should be offered surgery as a last chance for cure. This type of surgery should be limited to centers where specially trained personnel and adequate facilities are available.

SUMMARY

A review of the literature has been presented to show that pathologic examination of specimens removed surgically must show cancer if the surgical procedure is to be credited with the cure of the patient and that experimental surgical series cannot be compared with irradiation series.

We have tried to show that (1) surgery should not be performed as a routine procedure following adequate irradiation, (2) cancer resistant to irradiation should be treated by radical surgery without delay, and (3) retreatment by irradiation should be done more often for recurrent or reoccurrent cancer.

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ABSTRACT O DISCUSSION

DR. JOHN A. WALL, Houston: I recommend the authors' treatise as an excellent point of reference for evaluation and comparison of surgery and irradiation in the treatment of patients with cervical cancer. I must confess that although I am a clinical gynecologist, I believe the advocates of surgery are usually on the defensive in such a comparison. I consider radiotherapy to be the treatment of choice in most cases of cervical cancer. The one possible exception is when noninvasive cancer, or the so-called carcinoma in situ, is present. An excellent means of classification of lesions is afforded by the provision of the following three additional categories: cancer resistant to irradiation, recurrent cancer after irradiation, and cancer recurrent after surgery. I agree that it is important to establish whether or not a surgical procedure actually removes cancer when the cure is attributed to surgery. Certainly there is little chance of proof that the therapy was successful when, on microscopic study of the extirpated specimen, no demonstrable cancer is found.

Stage 0 or noninvasive cancer of the cervix can be successfully controlled by hysterectomy, and there is the added advantage that in young patients castration is not a necessary consequence. I believe that these noninvasive lesions should be excluded from a study of this type. In evaluating the success of a surgical program, patients are also excluded who develop recurrent cancer after surgery and are cured by subsequent irradiation. The authors' point in this instance de-

serves emphasis. Such cases would seem to demonstrate that there is no single absolute method for control of neoplasia of this type. It is preferable to concede that radiotherapy is the primary means of treatment but that surgery retains a definite place in the therapeutic program and should be recognized as a second line of defense.

There are, of course, instances in which combined treatment is clearly indicated. The matter of coordination of irradiation and surgery is one for individual evaluation. In general, I think it may be stated that the radiotherapeutic program can be accomplished much more economically and with fewer undesirable sequelae. Obviously there have been important advances and interesting results in recent surgical programs; however, advocates of surgery still do well to approach the long time survival statistics reported by radiotherapists all over the world.

The rapid developments in radiotherapy seem to me to offer a great deal more hope of future control than the current improvements in surgical procedures. Actually, all discussion should center on the best means to destroy cancer while it is limited to the pelvis. No therapeutic program is wholly effective after regional metastases occur, and after generalized metastasis only palliative measures are possible. Any technique, therefore, that effects tumor destruction in the midline is desirable. There is positive evidence that in cases of cancer of the uterine cervix, successful therapy depends on early diagnosis and treatment. Most of our efforts, then, should be directed toward recognition of preinvasive cancer and proper treatment of patients with stage I and stage II lesions.

In the future, advance detection of radioresistant lesions may be possible, in which case surgery could be instituted earlier and with less formidable complications. Recognition of radioresistance has been reported by some investigators, but so far has not proved widely applicable. The theory is a promising one, though, and if such a method can be perfected, it will have much practical value as an indicator of the necessity of surgical intervention. In most instances of radioresistant lesions or recurrent lesions I prefer a surgical program to further irradiation.

PROFESSORS GET TOP RATING

Professors in medical schools are ranked as having more prestige than physicians in any other field according to statistics compiled by the Bureau of Applied Social Research of Columbia University. About 1,700 students, in various stages of training, were asked to express their attitudes and scale of values regarding the various specialties of medicine. Internists ranked second; surgeons, pediatricians, obstetricians, general practitioners, and psychiatrists were rated in that order. More than one-third of the students surveyed indicated they would go into general practice, and only 10 per cent favored teaching and research as a career.

Poliomyelitis Foundation Has New Medical Director

Dr. Thomas M. Rivers, New York, has been appointed medical director of the National Foundation for Infantile Paralysis. He was formerly vice-president of the Rockefeller Institute for Medical Research. Dr. Rivers succeeds Dr. Hart E. Van Riper, who now is medical director of Geigy Pharmaceuticals of Ardsley, N. Y. He had been with the foundation since 1945.

Studies in Infertility

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SINCE MANY of the factors causing infertility are still unknown, the subject is involved and its literature voluminous. Despite these many studies, it has been said that investigations in infertility are still explorations in virgin territory. In any event, a brief review of the essential features will be presented.

Dr. Herman I. Kantor, associate clinical professor of obstetrics and gynecology, Southwestern Medical School of the University of Texas, presented this paper for the Section on General Practice, Texas Medical Association Annual Session, Galveston, April 23, 1956.

Infertility studies must evaluate basic requisites for fertilization (normal spermatozoa, normal ova, potent passageway, and adequate place for nidation) as well as important associated factors influencing conception. The fertility index is useful to estimate the possibility for pregnancy to occur, and response to treatment. Therapeutic procedures may enhance the likelihood of conception.

DEFINITIONS

Sterility denotes the absolute inability to reproduce. When applied generally it often becomes a misnomer because the absolute rarely presents a problem in reproduction. However, in common usage, it is synonymous with infertility.

Infertility refers to the relative inability to reproduce.

Primary infertility refers to couples who have never initiated pregnancy.

Secondary infertility refers to couples who have previously initiated pregnancy, whether or not it was carried to a successful conclusion. Couples which present the "one child sterility" problem are classified in this group.

INFERTILITY STUDY

The subject of infertility may be divided into two parts. The first includes the basic requisites for fertilization to occur: (1) normal spermatozoa, (2) normal ova, (3) patent passageway, (4) adequate place for nidation of the fertilized ovum. The second part includes the associated conditions which are generally more difficult to evaluate. Their importance is well recognized, but their mode of action in the solution of the infertility problem remains, for the most part, indefinite. They will be discussed later.

The infertility study is always started with a complete history and physical examination of both partners. At this time, infantilism of pelvic organs and other stigmas of endocrine deficiencies are especially noted. Following this, the basic requirements for conception are investigated.

SEMEN ANALYSIS

The semen should be collected in a clean, dry, glass container and examined within two hours if possible. Since contact with rubber or powder leads to inaccurate interpretation, the condom specimen must be considered unsatisfactory. The masturbation specimen is preferred, although the interrupted coital specimen is usually adequate.

Five tests are included in this determination:

Appearance and Volume.—The semen is usually opalescent, and the quantity varies from 2 to 5 cc. Excessive amounts of ejaculate are often poor in quality.

Viscosity.—The ejaculate is usually "stringy" when picked up on the end of an applicator. Excessive viscosity may be associated with poor motility. The significance of diminished viscosity is indefinite.

Motility.—Evaluation is based on the percentage of motile cells, the type of motility, and its duration. For practical purposes, motility is studied for six to eight hours and the grading is made on this basis. Absence of motility in an adequately procured specimen indicates sterility for that specimen. Hypomotility signifies relative infertility.

Cell Count.—The figure of 40,000,000 cells per cubic centimeter of semen is generally quoted as the low normal. However, an absolute diagnosis on the basis of figures less than this should not be made.

Morphology.—Examination of the stained smear is an important test for accurate semen evaluation. Abnormal forms, though always present, should number less than 20 per cent. When excessive, the impression of decreased fertility is warranted.

Comment.—It has not been possible to establish absolute values by which these tests may be standardized. Hotchkiss performed a significant experiment in an attempt to establish criteria. He compared 200 male members of fertile marriages with 150 of barren marriages in which the female partners seemed to be normal. A third control group was composed of 22 apparently normal, healthy men. After accumulation of his data, he found so much overlapping that only generalizations could be drawn.

Occasionally, a count of 25,000,000 cells or less was noted among fertile men. Sometimes conception occurred in the face of unusually high numbers of abnormal forms. Although these were exceptions, they tend to confuse the setting of definite standards.

Hotchkiss also determined the effect on the semen specimen of frequent coitus. He noted a reduction of volume and cell count. Following abstinence the reverse seemed to be true, namely, an increase in volume and cell count. Morphology and motility remain unchanged.

For most men, the basic cause for the "specimen of decreased fertility" remains unknown. It is always necessary to examine two or more specimens before any impression may be valid. Some of the causes usually listed are (1) congenital malformations, (2) intercurrent infections, general or genital, (3) undue fatigue or excessive worry, (4) endocrine imbalance, (5) physiologic variations, (6) chronic illnesses.

OVUM

Since recovery of the ovum is unusual, its presence is inferred on the basis of available procedures. There are no true clinical methods of determining its normalcy.

Ovulation may be diagnosed by means of endometrial biopsy, hormonal assays (chemical and biologic), potentiometer recordings, daily vaginal smears, and the basal body temperature graphs. Associated suggestive signs are midmenstrual discharge, spotting, or "mittelschmerz."

The procedures most frequently used among clinicians are as follows:

Basal Body Temperature.—When the body temperature is recorded under "basal" conditions for an entire menstrual cycle, it tends to follow a definite pattern. During the first half (the estrogen phase of the cycle) the general level is low. During the second half (the luteal phase) the temperatures are higher. Just prior to menstruation there is usually a precipitous drop in temperature. The point of variation from one phase to the other is frequently marked by a drop, followed by a rise on the next day. This is interpreted as the time of ovulation. Therefore, it also indicates approximately the most fertile time of the cycle.

Unfortunately, this determination is not completely specific. During the past few years, I followed 3 patients with typical biphasic temperature curves. However, biopsies taken in the immediate premenstrual phase revealed a proliferative endometrium, indicative of the absence of ovulation. Personal com-

munications with other clinicians have confirmed these observations. However, in the absence of a more accurate simple test, the basal temperature method is worthy of use.

Endometrial Biopsy.—The luteal phase of the cycle is reflected in the endometrium by the presence of a secretory glandular pattern. When such a pattern is found, it is good presumptive evidence for the occurrence of ovulation. Hertig of Boston has been able to "date" the endometrium by using the configuration of the glands as an index of luteal phase activity. A fully mature secretory phase indicates a well developed corpus luteum. Conversely, an immature or early phase indicates poor luteal activity. In the latter case, it is possible that fertilization without nidation may occur, and on this basis progesterone may be used with occasional good effect.

Daily Vaginal Smears.—When vaginal smears are taken daily and studied during a complete cycle, the change from the estrogen to the luteal phase may be noted. A drop in cornification count and the disappearance of leukocytes during midcycle are significant. Occasionally the appearance of red cells also may be noted.

This method is not difficult to carry out although it is time consuming and therefore expensive to the patient. A number of cycles must be studied to determine accurately the time of ovulation.

Other Factors.—When does ovulation occur? Since fertilization is presumed to take place 24 to 48 hours after the ovum is released, this time may be important to the infertility treatment. On the basis of operative records, ovulation is thought to occur usually from 14 to 16 days before the onset of the next menstruation. However, great variability has been noted. Hartman worked out the time of ovulation in monkeys, and frequently noted inconsistency and irregularity. Cases of pregnancy following isolated coitus have been reported for every phase of the cycle (including the menstrual). Thus, only a general answer may be given to this specific and important question.

What can be done for the patient who does not ovulate? It must be stressed first that not all cycles among normal women are ovulatory. Therefore, the diagnosis of anovulation may be made only after many cycles have been studied. A vast literature has accumulated on this one phase of infertility. Among the recommended hormones, the estrogens, the progesterones, and the pituitary gonadotropins all have been listed as the drug of choice. However, much reasonable doubt still exists regarding their practical efficacy.

Thyroid has proved useful among patients who exhibit manifestations of hypothyroidism. When the need for such therapy exists, results are often excellent.

Another valuable treatment for anovulation, especially with amenorrhea, is low dosage irradiation to the ovaries and pituitary gland as advocated by Kaplan. He has reported good results, with the production of ova and subsequent pregnancy. In recent years, 5 patients were subjected to this procedure. Subsequent endometrial studies revealed secretory patterns, and 4 have become pregnant and have been delivered of normal children. Mazer and Check reported a group of 57 women who were subjected to low dosage irradiation. Three-fourths subsequently conceived. Moreover, among the patients with irregular menstrual cycles, almost nine-tenths were restored to regularity. On the other hand, many reports have appeared noting unsatisfactory results from this same procedure.

It may be pointed out again that there are no practical means for determining the normalcy of the ovum. It is interesting to compare this fact with semen analysis. Some abnormal spermatozoa are present in all fertile specimens. Can abnormal ova be a factor in sterility? Does the abnormal ovum resist fertilization or result in abortion? May this be a cause of infertility among patients for whom no other factor may be found? These are interesting questions for speculation at this time, and perhaps future investigations will answer them.

Some of the gonadotropes must be given with great caution. Excessive dosage may lead to cystic degeneration of the ovary. Although antihormone effects have never been proved in man, these drugs cannot be classed as innocuous.

PASSAGEWAY

The canal to be traversed by the sperm extends from the vagina, through the cervix and body of the uterus to the fallopian tube, the trysting place for sperm and ovum. Although normalcy enhances the possibility of pregnancy, patency is the minimal basic requirement. Obstruction may occur at any point and must be overcome before conception can be achieved. Only the more usual types of obstruction will be considered. Congenital malformations must always be kept in mind.

Vagina.—Faulty coital technique, vaginal occlusions, organic barriers such as impenetrable hymen, or functional problems such as vaginismus may be potent obstructions to conception. A faulty start such as this may place the sperm at a disadvantage it cannot reasonably overcome.

Inflammatory lesions with acid discharges may devitalize even virile sperm. The Huhner test in which the vagina and cervix are examined postcoitally for living sperm may demonstrate this chemical obstruction. This test is an integral part of the infertility study.

Cervix.—Although cervicitis is rarely a barrier in

the fertile couple, it seems to be important to the general problem of infertility. Among some patients, the discharges are definitely hostile to the advance of the spermatozoa. In any event, the inflammatory lesion should be treated adequately.

When the exit of menstrual discharges is not impaired, there is no logical explanation for stenosis causing infertility. However, the number of pregnancies which follow cervical corrective manipulation is more than mere coincidence would seem to warrant. Dilatation and curettage, hysterosalpingography, and tubal insufflation occasionally seem to be therapeutic measures as well as diagnostic. Recently, for example, a 39 year old woman presented herself for infertility studies. Her husband was 42 years of age, and the infertility dated 15 years. Specific investigation, therefore, was discouraged. The chances for conception to occur were poor. Because of an irregular bleeding history, a dilatation and curettage was performed at which time a small cervical polyp was removed. This patient promptly became pregnant. Perhaps the explanation may be coincidence, but at least other possibilities must be considered.

Rabbits are known to ovulate at the time of coitus, hence their reputation for prolific breeding. The possibility of pituitary-gonadal response following cervical stimulation definitely exists. Such a relationship has never been demonstrated in man. However, small variations in hormone levels are difficult to determine with our present methods.

Uterus.—The uterus will be discussed later.

Tubes.—Inflammatory lesions are the greatest single cause for sterility. In a series of patients presented by Siegler, 50 per cent had infertility because of a tubal factor. Following an attack of salpingitis, the tubes may return to normal, maintain foci of chronic infection, or become occluded. There are two widely used methods for determining the status of the fallopian tubes:

1. In the Rubin test carbon dioxide under controlled pressure is introduced into the uterus by means of a cannula fitting well into the cervix. The system may be connected to a drum in order to obtain graphic evidence. It must be recalled that spasm may lead to the false impression of tubal closure. Before the tubes are labelled nonpatent, insufflation must be repeated with the aid of sedation and antispasmodics. Demerol and atropine or nitroglycerine are satisfactory. Shoulder pain and the radiographic demonstration of subdiaphragmatic gas are positive evidence for patency.

2. Hysterosalpingograms offer graphic proof of the status of the tubes. If a rapidly absorbable medium is desired, Salpix will be found satisfactory. Lipiodol offers the advantage of permitting delayed study. Occasionally patency is found only on the 24 hour film. These films also may confirm the site of obstruction.

What can be offered to patients with tubal block? First, the pressures of repeated insufflation may overcome the obstruction. Second, conservative plastic tubal repair, in selected patients, has proved successful for conception in about 15 per cent. In a larger group, patency may be achieved, but pregnancy does not follow. Physiotherapy, principally deep heat, also has been helpful occasionally. Conservatism should be the keynote of therapy for these patients.

PLACE FOR NIDATION

Successful nidation of the fertilized ovum requires a relatively normal endometrium in the late secretory phase. The studies by Hertig, in which the development of the secretory reaction was measured, may be important in this connection. The fault may be a poorly developed corpus luteum or perhaps a hypoplastic uterus. In either event, administering progesterone to these patients may be worthy of trial.

The use of estrogens in treating the hypoplastic uterus usually proves unsatisfactory. If the endometrium reveals typical and adequate cyclic changes, the diagnosis of true hypoplasia may be inaccurate. In the absence of such cyclic changes, the primary fault is ovarian or pituitary. The small uterus may exhibit some increase in size during estrogen therapy, but usually the growth is temporary. Cessation of such treatment leads to a return to its original state.

Malposition of Uterus and Infertility.—On the basis of established facts, there seems to be no specific relationship between the malposed uterus and infertility. The association of retroversion with a high degree of fertility occurs too frequently to consider this a serious cause. Frank reported an unusually high incidence of infertility among patients with sinisterposed uteri, but no explanation was offered. Unless the uterus is fixed in malposition and causing symptoms, it would appear best to direct therapy elsewhere. Fixation of the uterus may provoke infertility or repeated abortion. It is usually associated with endometriosis.

Uterine Fibroids and Sterility.—The relationship between uterine fibroids and sterility has received considerable attention. If one subscribes to the theory of hyperestrogen secretion in relation to fibroid development and growth, one may assume this same cause to be a factor in infertility. In any event, only after completion of the study, and in the absence of more active deterrents to pregnancy, should myomectomy be performed. If the fibroid has occluded the passageway, pregnancy may follow. It is difficult to evaluate the many successful reports following removal of fibroids in other locations. To the reader, they may seem to be coincidental; to the surgeon, they are always the direct result of the procedure.

ASSOCIATED FACTORS

After the basic requirements have been established within the limits of our present knowledge, the associated factors must be investigated. Unfortunately, despite their importance, their specific relationship to infertility may remain vague.

General Health of Couple.—Frequent attacks of acute illnesses or chronic diseases tend to decrease fertility levels.

Age of Couple.—Obviously as age advances, the general possibility for conception tends to diminish.

Diet and Environment.—Maintaining daily tension and poor dietary habits, including those associated with obesity, seem to militate against pregnancy. Mengert has described a couple who required vacation periods in order to achieve pregnancy. This is often one of the most successful therapeutic measures in the gamut of possible procedures. The high protein, high vitamin type of diet is recommended.

Thyroid Gland.—The inter-relationship between the thyroid gland and the pituitary-gonadal system is well established, although its direct mode of association is still unknown. Where obvious malfunction is present, it must be corrected. However, most patients present minor and relatively asymptomatic variations from normal. The usual laboratory tests consist of the basal metabolism, the protein-bound iodine, the radioactive iodine uptake, and the blood cholesterol determinations. Although the results may be within normal limits, many clinicians give thyroid empirically. The normal thyroid gland elaborates from 2 to 2½ grains daily. Since most preparations are well absorbed, the dosage always should remain well within this limit. Comparative metabolism testing may be used to advantage during thyroid medication. However, it always must be kept in mind that anxiety or excitement, even when not overt, renders the metabolism test nonbasal.

Endometriosis.—Even in the presence of demonstrable normal cyclic changes, there is a high incidence of infertility among patients with endometriosis. Conservative surgery is often followed by pregnancy.

Psychic and Emotional Factors.—Our present tests are inadequate to demonstrate these effects, although the part they play is well known. The tension anxiety influence on conception is commonly observed.

Miscellaneous and Unknown.—Often a minor deviation from established procedure may prevent conception. Recently a patient was seen who used Tampax after coitus in order to "help retain the semen within the vagina." Postcoital douching is not infrequently used "for cleanliness." Only time and patience can elicit the many facets of the "insoluble" problems in infertility.

FERTILITY INDEX

In the absence of absolute infertility, the fertility index may be used to estimate the possibilities for a given couple to conceive. Each partner is allotted an arbitrary score with a maximum of 10 points for each of five important factors related to the sterility problem. These include for the male: (1) semen analysis, (2) status of prostate, penis, and testicles, (3) general health and age, (4) status of the thyroid, (5) employment, fatigue, emotional, and psychic factors. For the female they include: (1) proof of normal ovulation, (2) patency of passageway, (3) status of pelvic organs, (4) normal hormonal relationships including the thyroid, (5) fatigue, emotional, and psychic factors. The total score is determined, with 100 representing the highest possible fertility index for each couple.

In the absence of anything which absolutely precludes conception, the fertility index is an aid to prognosis and response to treatment. It is assumed that an index of 60 is the low minimum for conception. The general aim of therapy is to elevate the index above this level. It immediately becomes apparent that treatment directed toward one partner may be insufficient. A fertile woman may achieve pregnancy even when the husband's index is fairly low.

The fertility index of the couple is variable, and on this basis, pregnancy which occurs during vacation periods or perhaps after adoption seems somewhat more logical. Elevation as a result of eliminating antagonistic factors is a step in the right direction.

SPECIAL THERAPEUTIC PROCEDURES

Glucose-Ringer Precoital Douche.—It has been found that the motility and endurance of spermatozoa are increased when they are suspended in a medium containing glucose. With this in mind, an isotonic solution of this type is used as a precoital douche, and such preparations are commercially available. The value of this procedure may be more theoretical than real, but in selected cases it is worthy of trial.

Diaphragm.—Use of the contraceptive diaphragm to retain the semen within the vagina is occasionally recommended. The diaphragm must be clean, free of any powder, and dry. It is inserted immediately after intercourse and left overnight. This procedure may be of some value, especially with retroversion where the cervix is pointed away from the seminal pool. It permits lying on the abdomen without loss of the semen. Recently Weisman devised a polyethylene covered tampon for this purpose.

Vitamins.—Vitamin E is probably of no value for these patients. All the vitamin preparations are frequently used, but reports of their success seem lacking.

Exercises.—Exercises are directed toward improving the general well being and are nonspecific.

General Hygienic Measures.—When indicated, corrections of poor hygenic practices always should be made.

Coital Habits.—Coital habits should be investigated and regulated if unreasonable.

Artificial Insemination.—When used with the husband as a donor, artificial insemination has been described as giving the sperm "a 2 inch boost on a 6 inch journey." In the absence of refractory cervical lesions, its value is generally doubtful.

When the husband is proved sterile, the use of a heterologous donor may be considered. If the female partner is normal, conception frequently takes place. Both partners must understand fully the procedure and the responsibility of the physician. The legal status of this procedure has not been decided fully. From three to six cycles are usually required, with two inseminations during each cycle. Seventy-five per cent of a selected group of patients achieved pregnancy with donor insemination.

The present technique for therapeutic insemination involves placing sperm in the endocervix combined with the use of the plastic cervical cap. The semen specimen is drawn into a clean, sterile syringe, and a small amount is injected within the cervical canal. A polyethylene cap in which a small hole has been drilled near its uppermost edge is then fitted over the cervix. The remainder of the specimen is injected, without difficulty, into the cap. Although a negligible amount may be lost, the simplicity of administration renders this technique the easiest of recommended methods.

SUMMARY AND CONCLUSIONS

The principal and associated factors in the problems of infertility have been discussed.

Several pathways for future investigation are indicated.

The recommended forms of therapy have been presented.

Only by careful, planned investigation can the basis for a couple's infertility problem be determined, and proper treatment used. A better understanding of the problem often leads to its successful solution.

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Fluid and Electrolyte Problems In Obstetrics

Practical Management

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IN ORDER to understand clearly the abnormalities of fluid and electrolyte balance in pregnancy, the physiologic changes which occur in the mother during gestation must be reviewed.

Blood Volume.—One of the greatest alterations that takes place in the maternal organism in pregnancy involves the vascular system. Recent studies show there is an increase in total blood volume of approximately 30 per cent. This is mostly an increase in the plasma volume due largely to hydremia. The red blood cell volume does increase, but to a lesser extent. This change is progressive until the seventh month of pregnancy when it becomes stable. Such an impressive increase in blood volume is probably an adaptive mechanism of the maternal organism designed to meet the increased demands of the enlarged uterus with its greatly expanded vascular system.

There are two facts of clinical importance which result from this increase in blood volume. First, the

normal values of laboratory tests are altered. The hematocrit level falls an average of 15 per cent and the viscosity of the blood decreases. The erythrocyte count may drop an average of 750,000 cells per cubic millimeter, and the hemoglobin falls about 2 Gm. per 100 cc. This may produce a "pseudo anemia" and must be taken into account in the diagnosis of anemia of pregnancy.

Dr. Stewart A. Fish, who is from the Department of Obstetrics and Gynecology of the University of Texas Southwestern Medical School, presented this paper for the Section on Obstetrics and Gynecology at the 1956 Annual Session of the Texas Medical Association, April 24, in Galveston.

Physiologic changes occur in blood volume, water metabolism, and acid-base equilibrium in normal pregnancy. As a result, normal laboratory tests are altered and cardiac output is significantly increased. Fluid and electrolyte imbalances which may occur in hyperemesis gravidarum, preeclampsia, and acute renal failure are discussed, and a practical method is outlined for management of each.

Second, the increase in total blood volume imposes an extra burden on the heart, making it pump a greater volume. There is at least a 25 per cent increase in cardiac output. This change is progressive until the eighth month of gestation when it also becomes stable. A fall tends to occur approximately two weeks from term. This alteration is extremely important in patients with heart disease as it may tax this organ sufficiently to produce cardiac failure.

Water Metabolism.—Another normal change during pregnancy is increased water retention in the interstitial space. Chesley[1] has found a 10 per cent increase in available extracellular water in normal pregnancy over the nonpregnant state. Clinical evidence of this increase in body water is the edema of the lower extremities demonstrable sometime during gestation in nearly 65 per cent of normal women.[2] Another evidence is the diuresis occurring normally from the second to the fifth postpartum day. Diaphoresis is also seen at this time. The edema due to water retention must be differentiated from that due to hypoproteinemia and increased venous pressure in the lower extremities. The latter, which is purely dependent in origin, is usually due to increased pressure on the pelvic veins by the enlarged, gravid uterus.

The cause of the physiologic edema of normal pregnancy is not definitely known. However, there is laboratory evidence that it is secondary to sodium retention. According to Chesley,[1] sodium is retained in pregnancy at an average rate of about 3 Gm. per week. Taylor[8] also has noted a marked loss of sodium in the postpartum patient. The steroidal sex hormones, which are present in high concentration in pregnancy, probably cause the sodium retention since estrogen and progesterone have been shown to have this effect in animals and man. It is necessary therefore for additional water to be retained during pregnancy in order to maintain the cellular osmotic pressure.

Acid-Base Equilibrium.—A reduction of the alkali reserve occurs during pregnancy. The carbon dioxide combining power value falls nearly 20 volumes per 100 cc. by the end of gestation. This is a decrease in the total carbon dioxide content of the serum of about 10 per cent. The hydrogen ion concentration of the blood remains normal and there is no increase in organic acids. This indicates a compensated alkali (carbon dioxide) deficit rather than a true acidosis. The cause of this change is not clear. It has been suggested that hyperventilation which occurs during pregnancy is compensated for by a lowered plasma bicarbonate and carbonic acid level.

The three normal changes occurring in fluid and electrolyte balance in pregnancy may be summarized as (1) a 30 per cent increase in blood volume, (2) a physiologic edema, probably secondary to sodium retention and clinically demonstrable in 65 per cent of normal pregnant women, and (3) a compensated alkali (carbon dioxide) deficit of unknown cause.

With this in mind we may consider the pathologic changes which occur in fluid and electrolyte balance in the pregnant woman.

HYPEREMESIS GRAVIDARUM

In women with exaggerated nausea and vomiting of pregnancy, fluid and electrolyte changes develop. The etiology of hyperemesis is not entirely clear, but the process is often interrupted by the correction of the two main abnormalities, dehydration and starvation.

When acetone appears in the urine of a patient with hyperemesis, the condition is usually considered serious and should be treated vigorously. The dehydration, which is accompanied by chloride loss, and the starvation may be corrected simultaneously by the administration of 5 or 10 per cent dextrose in saline solution. No fluids are allowed by mouth, and sufficient intravenous fluids are given to maintain an adequate urinary output. The insensible loss from perspiration and fluid lost in vomitus also must be replaced. Adequate vitamin supplement should be given along with this fluid to prevent deficiency states and polyneuritis of pregnancy. Fitzgerald[3] has shown recently that potassium deficiency

seems to be a factor in retarding recovery in some patients with hyperemesis. This deficit occurs in hyperemesis as a result of several factors. There is a significant amount of potassium lost in the gastric juice, and anorexia and vomiting result in a diminished intake. The kidney may fail to conserve potassium, and the renal loss may be increased by the adrenal corticoid response to stress. Additional ions may be lost from the skin and intestine. It may be useful, therefore, to give an additional 3 Gm. of potassium daily to patients with hyperemesis provided the urinary output is adequate.

Although this problem is often very annoying, hyperemesis is usually self limited in most cases and rarely requires drastic measures such as interruption of pregnancy.

PREECLAMPSIA

Preeclampsia, or nonconvulsive toxemia of pregnancy, is characterized by hypertension, edema, and albuminuria. The etiology of this syndrome is unknown although there are many theories as to its cause. When preeclampsia occurs, there is an exaggeration of the physiologic water retention of pregnancy, and generalized edema develops. Hypertension occurs, perhaps as a result of the systemic vasospasm which is present. Albuminuria is thought by some to be caused by vasospasm in the kidneys. As a result of the toxemic process, electrolyte imbalance may develop.[6] A shift of sodium from the vascular to the extravascular space occurs. It is also known that the concentration of sodium in the edema fluid of patients with preeclampsia is greater than that in the serum. No difference in concentration of sodium in the edema fluid and serum of pregnant patients with physiologic edema has been found. The potassium concentration in edema fluid is the same in patients normally pregnant as in those with preeclampsia. The basic problems concerned in the electrolyte and fluid balance management of preeclampsia are (1) the prevention of further fluid retention, (2) the initiation of diuresis, and (3) the maintenance of a normal electrolyte pattern.

The process of toxemia may be interrupted by the termination of pregnancy. Occasionally when it is desirable to give the fetus more time to mature in utero in instances of mild toxemia, it is possible to treat the disease conservatively. The basic therapeutic principles which should be observed in preeclamptic patients with adequate urinary output are the following:

1. Hospitalization if possible.

2. Restriction of sodium in the diet in an effort to prevent further water retention.

3. Adequate bed rest, as the renal blood flow increases considerably in the supine position and spontaneous diuresis often occurs.

4. Sedation which may alleviate the generalized vasospasm and reduce the hypertension. Barbiturates, chloral hydrate, and morphine are frequently utilized.

5. Diuretics: (a) Ammonium chloride. By producing a relative acidosis, ammonium chloride causes an increased urinary output. The optimum dosage is 8 to 12 Gm. a day for three days. Enteric coated tablets increase the gastrointestinal tolerance. (b) Mercurial diuretics. These may be used cautiously in patients without evidence of renal damage. If oliguria is present or hematuria is noted, they should not be used. (c) Diamox. By inhibiting the enzyme carbonic anhydrase in the renal tubule, considerable mobilization of body water may be produced. The usual dose is 125 mg. three times a day for three days. This may be repeated weekly. When given for a prolonged period, acidosis or hypokalemia may result. Otherwise, toxic effects are few. This drug is most useful in those instances in which edema is excessive and hypertension and albuminuria are negligible.

6. Fluid requirements. Since diuresis cannot be produced with large amounts of oral fluid in preeclampsia, the intake should be limited to approximately 2,500 ml. a day or 1,500 ml. in addition to the urinary volume. If intravenous fluids are necessary, hypertonic glucose solutions may be used. Tatum[7] has recently shown that 5 per cent dextrose in water produces a marked net gain in body water in preeclampsia whereas 20 per cent solutions do not. Sodium and potassium distribution are not altered by the use of either solution in patients with preeclampsia.

7. Cation exchange resins. Sodium can be removed from body fluid by the use of cation exchange resins. These substances have been used experimentally with some success in toxemic patients, along with a low sodium diet. A daily dose of 50 Gm. given orally or by retention enema may significantly reduce the serum sodium, and as a result, edema fluid is also lost.

ACUTE RENAL FAILURE

In some instances of severe preeclampsia or eclampsia (toxemia with convulsions), moderate or complete urinary suppression occurs. This is usually due to excessive and prolonged vasospasm in the kidney which produces renal tubular ischemia and epithelial necrosis. Only the basement membrane remains, and consequently, a majority of the glomerular filtrate is reabsorbed. If some of the tubules are spared, which is the usual case, oliguria (600 ml. of urine or less per day) results. If all the nephron units are involved, anuria supervenes. This type of tubular dam-

age is almost always reversible, unless the ischemia has been severe and prolonged enough to cause destruction of the basement membrane of the tubule or bilateral cortical necrosis of the kidneys. In the usual reversible type, the tubular epithelium regenerates in 7 to 10 days. The new tubular cells require several days to reestablish some of their selective resorptive capacity and several weeks to return to a normal state. Until the tubules regain their resorptive function, diluted urine containing much sodium, potassium, and chloride is excreted in large quantities and dehydration with electrolyte imbalance is likely.

The management of each phase of this type of acute renal insufficiency requires special attention. The principles of conservative management are given.

INITIAL PHASE

The etiologic factor is corrected, that is, pregnancy is terminated. Medications excreted by the kidney which are likely to become accumulative are withheld. An indwelling urethral catheter is inserted, and intake and output are measured accurately.

ANURIC PHASE

Fluid balance is maintained by matching the total fluid intake with the estimated insensible loss plus the measured fluid loss in urine, feces, vomitus, and drainage. This is usually 500 to 1,500 ml. daily, depending on the environmental temperature. A significant amount of body water is produced by the endogenous breakdown of tissues during the anuric phase, and this process contributes about 470 ml. of water a day in a 150 pound adult.[4] It is therefore extremely important not to over-hydrate the patient, and it is perhaps better to err on the side of too little fluid replacement during this critical period.

Protein catabolism is reduced by utilizing a high caloric and a protein and potassium free dietary regimen. This prevents starvation and reduces the accumulation of potassium and nitrogenous wastes. There are a number of commercially available nutrient supplements which are suitable for this purpose. If oral feedings are not tolerated, a minimum of 100 Gm. of intravenous glucose daily will provide adequate calories for protein sparing effect.

Acidosis, which may occur from the retention of organic acids produced by tissue breakdown, is corrected by intravenous sodium lactate or oral sodium bicarbonate.

Serum potassium may be elevated or depressed depending on the diet, fluid intake, and amount of cellular breakdown. If facilities are not available for serum potassium determinations, abnormal levels may sometimes be diagnosed early by typical electrocardiographic changes. In instances of hypokalemia, small amounts of potassium may be given orally or by vein. High serum levels may be temporarily lowered by the use of glucose-insulin injections (1 unit of insulin per 2 Gm. of glucose) since potassium is utilized in the formation of glycogen. Cation exchange resins also may be used. Jejunal and peritoneal lavage with hypertonic solutions may remove significant amounts of potassium, and the artificial kidney, if available, may be lifesaving by helping to restore a normal electrolyte pattern.

Tetany, due to a fall of serum calcium in patients with acidosis, may be prevented by the use of calcium gluconate intravenously or oral calcium lactate.

DIURETIC PHASE

Since the excretory function of the kidneys returns before the regulatory function, large amounts of water and electrolytes are lost, particularly sodium and potassium. These electrolytes must be replaced since they are "washed out" with this obligatory diuresis. Losses may be estimated by the volume of urine and its chloride concentration[4] or by serum sodium and potassium determinations. As much as 10 L. of diluted urine may be excreted in 24 hours at the peak of diuresis. This phase, which lasts several days, may be more dangerous than the anuric phase since electrolyte and fluid imbalance may develop rapidly. Oral sodium chloride and potassium chloride are given, if tolerated, and additional fluids are administered to match the urinary output. As the tubular epithelium recovers, the urinary output begins to fall and supplementary fluids are simultaneously reduced. The blood urea nitrogen which may have reached high levels during the anuric phase may not fall for several days after diuresis occurs, and this should not cause alarm. When death does occur, it is due in most instances to electrolyte and fluid imbalance and not to a high blood urea level.

When the urea clearance achieves a 30 per cent value or higher, the patient is considered sufficiently recovered to drink and eat at pleasure and may be allowed to go home. Several months may be required for renal function to approach normal.

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ABSTRACT OF DISCUSSION

DR. JACK A. PRITCHARD, Dallas: It is important that we appreciate the changes in body fluids and electrolytes during normal pregnancy and the puerperium. Normally following delivery there is considerable mobilization of water and electrolytes and a significant diuresis. During the first few days of the postpartum period there is also involution of the uterus with the release of considerable amounts of potassium, phosphate, and nitrogenous waste products. Consequently during the immediate postpartum period the most dangerous result of anuria, hyperpotassemia, develops more rapidly than it would in patients who have not been recently pregnant. Actual measurements with the flame photometer as well as electrocardiographic tracings to search for signs of potassium intoxication should be made daily. As soon as the potassium concentration starts to rise, 50 Gm. of potassium exchange resin should be given as a retention enema two to four times a day. Such therapy usually will prevent lethal hyperpotassemia during the 7 to 10 days prior to the hoped-for diuresis.

These women need little in the way of fluids as long as they are anuric. Unless they are quite febrile 500 ml. of 20 per cent dextrose in water a day is optimal. The dextrose serves to inhibit protein breakdown and to inhibit the release of potassium from the cells. If dangerous hyperpotassemia develops and if the patient is markedly acidotic, the artificial kidney should be used promptly.

Using this regimen not long ago I had the good fortune to observe recovery in a recently pregnant woman who received 1,000 ml. of grossly incompatible blood and who did not experience diuresis until 16 days later. The artificial kidney was used once primarily to correct intense acidosis; hyperpotassemia was prevented by use of potassium exchange resin.

In this case a maximum daily urinary output of 12,000 ml. was reached. Therapy had to change abruptly; water, sodium, chloride, and potassium were given in relatively huge amounts.

The careful management of such patients should usually produce gratifying results.

Dr. Liston Takes Anderson Hospital Post

Dr. David E. Liston has been appointed to succeed Dr. Roy C. Heflebower as assistant director of the University of Texas M. D. Anderson Hospital and Tumor Institute, Houston. Dr. Heflebower has retired, but will serve as a consultant on grants and special projects.

Globulin Therapy In Toxemia Of Pregnancy

Preliminary Report

ORIAN C. WESTBROOK, M. D.; WALTER G. OLIN, M. D.; and WILSON G. BROWN, M. D.

Houston, Texas

EARLY IN 1955 we began an extensive study of the paper electrophoretic migration patterns of serum proteins obtained from gravid women. It was soon confirmed that pregnancy is attended by alteration of the serum protein fractions. There was a marked change in the percentage of total protein mass which the various fractions came to occupy. It was noted that the gamma fraction occupied an increasing percentage of the total protein mass with approaching term in the normal gravida. Failure of average augmentation of the gamma fraction was especially common in the primigravida. This same trend, to a more marked degree, was found in a gravida with acute toxemia of pregnancy.

Dr. Orian C. Westbrook and his co-authors are from the Departments of Obstetrics and Clinical Pathology, Hermann Hospital.

In pregnant women, there is a change in the percentage of serum protein fractions, the gamma fraction increasing toward term in the normal gravida. Average augmentation of the gamma fraction tends to fail in the gravida with acute toxemia. Treatment with immune gamma globulin has relieved toxemia in 2 patients.

With this information as a basis, 2 women with acute toxemia of pregnancy were treated with immune globulin which contained 1.65 Gm. of the gamma fraction.

CASE REPORTS

CASE 1.—The patient was a 23 year old Negro primigravida who was first seen in the outpatient department at 21 weeks' gestation. At that time the blood pressure was 120/80; pulse, 80 and regular; weight, 130 pounds. There was no previous history of hypertensive, cardiac, or renal disease. Rh factor was positive; serology was negative. Hemogram, chest roentgenogram, and urinalysis were within normal limits.

The blood pressure and weight began to show significant increases at 34 to 35 weeks' gestation. Despite low salt diet and cautions on weight curtailment, the patient progressed to preeclamptic status at 37 weeks. At 38 weeks' gestation the patient had blood pressure of 140/100, 3 plus edema, and a 3 plus proteinuria. The patient was hospitalized and placed on a 1,200 calorie, low salt diet with distilled water. Uric acid was 14.4 Gm. per 100 cc. and gamma globulin was 14.8 per 100 cc. of total protein mass. The blood pressure on the first hospital day continued to rise and was finally recorded as 152/112. The patient offered the complaints of frontal headache and scotomas. Proteinuria was 3 plus. At this time the patient was given 10 cc. of immune globulin (Lederle, 165 milligrams of gamma globulin per cubic centimeter) intramuscularly. One hour after infection, the blood pressure was recorded by the same examiner as being 130/98. Two hours after injection, the blood pressure was 124/84 and the patient stated that her headache had disappeared. Four hours after injection, the blood pressure was 118/78; pulse was 84 and regular.

The following day the proteinuria was reported as 2 plus, the patient had lost 2 pounds, and the uric acid was 11 Gm. per 100 cc. Thirty-six hours after the injection the blood pressure was recorded as 128/86. The readings stabilized at 124-130/84-94. The edema decreased to a trace, and the proteinuria to a trace to plus 1 (voided specimen). The patient continued on the low salt diet, but was given full ambulation privileges the day after the injection. She was observed on this regimen for 10 days without blood pressure elevation or subjective symptoms.

At the end of this period, labor was induced by simple amniorrhexis. After a normal intrapartum course, the patient delivered a healthy, living child under low spinal anesthesia. The puerpurium was uneventful.

CASE 2.—This patient was a 16 year old Negro primigravida whose Rh was positive and serology negative and who was first seen in the outpatient section at 28 weeks' gestation. At that time the patient denied any previous renal, cardiac, or vascular symptoms or history. The weight was recorded as 152 with a stated normal of 132 pounds. The physical examination was within normal limits, with a recorded blood pressure of 106/60. There was no evidence of edema noted. Hemogram, urinalysis, and chest roentgenogram were all normal. The patient was cautioned about her weight gain and advised to abstain from salt. The antepartum course was normal, with a continued tendency for excessive weight gain. Pretibial edema of a moderate degree was noted from time to time. Urinalysis occasionally showed a trace reaction for protein.

The patient was admitted to the hospital at 38 weeks' gestation in prodromal labor. Edema was 2 plus and blood pressure was constant at 130/100. The cervix was 2 cm. dilated, well effaced, with a cephalic presentation at a 0 station. Membranes were intact. Urinalysis was plus 1 for protein. The patient was given 3 grains of Nembutal orally for restlessness and irregular contractions. Approximately six hours later active labor ensued. The blood pressure began an upward course. At 3 cm. dilatation with intact membranes, it was recorded as a steady 170/120 between

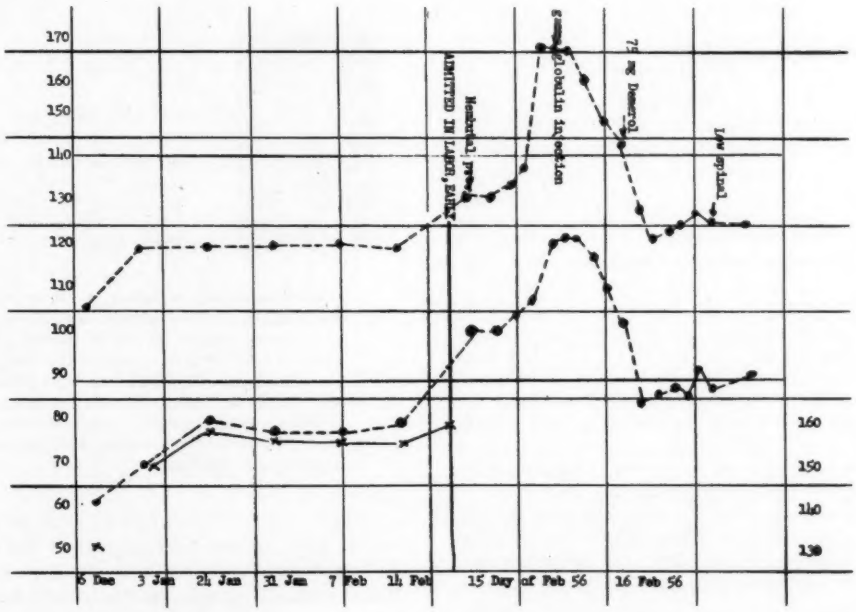

Fig. 1. Case 2. Graph showing the course of blood pressure in a 16 year old primigravida with toxemia of pregnancy treated with globulin. The upper dash line curve is the systolic, the lower dash line curve the diastolic blood pressure measured in millimeters of mercury on the left scale with straight heavy lines at the normal 88 and 140. The solid line curve is the weight in pounds, with the scale at the right of the graph.

uterine contractions. After 30 minutes with blood pressure at this level, 10 cc. of Lederle gamma globulin was given intramuscularly. Within two hours the blood pressure began to fall. Four hours later, readings of as low as 122/86 were recorded frequently between contractions. With contractions, the blood pressure rose as high as 136/98. Sedation was purposely withheld. At 6 cm. dilatation, 75 mg. of Demerol was given intramuscularly. After a total labor of 14 hours the cervix was completely dilated, and the caput was visible through the introitus. The blood pressure was recorded at 122/84, and the membranes spontaneously ruptured.

The patient was given a low spinal anesthesia and delivered by low forceps extraction. Ergotrate was withheld postpartum and the patient experienced a normotensive puerpurium.

SUMMARY

Two cases with the syndrome of acute toxemia of pregnancy treated by the intramuscular administration of gamma globulin are presented. Both patients appeared to respond to this administration by regression of their subjective complaints and their objective findings. The blood pressure was controlled from normal to near normal limits.

Drs. Westbrook, Olin, and Brown, Hermann Hospital, Houston.

Medical Economics, 1844

A journal kept by Dr. John S. Ford, a practicing physician in San Augustine from 1838 until 1845, gives in detail the charges he made for each family for his medical services. The population of the town probably did not exceed 500, and there was at least one other physician there, the highly respected Dr. Joseph Rowe. During a nine month period in 1844, Dr. Ford made charges totalling approximately $750; his journal shows that he collected about 50 per cent of this.

In his bookkeeping, Dr. Ford made no distinction between office and home visits; it is probable that he actually did not maintain an office, and that all his visits were home visits. His practice during this time consisted of 94 calls—two obstetrical cases, two consultations, and one major surgical procedure, together with medicines dispensed. His surgical fee was listed, "Visit for son at Alexanders, incision and removing bone from off son's brain. Consultation Dr. Barber and sundry visits, med. & c per son. $50."

His obstetrical fees compared closely with those in rural Texas even in the late 1930's; for example "Sunday attention to lady during parturition, $25," and "Obstetrical fee, $15." For visit and consultation he charged $10, a fee not too unusual today.

Photostatic copies of Dr. Ford's journal are found in the Texas Archives at the Barker History Center, University of Texas, Austin.

—Dr. J. M. Coleman, Austin.

Obstetric Oxygenation

Valuable Routine Especially During Forceps Assistance

JOHN C. DUNLAP, M. D., F.A.C.S.

Waco, Texas

THE NEED of oxygen, prime atom without which life cannot exist, is increased in both mother and child during the energy-consuming birth process. Impairment of oxygen transport is involved in virtually all maternal complications, including hemic, cardiovascular, pulmonary, metabolic, infectious, and neurogenic disturbances. Pure oxygen is also of value for prevention of nausea and vomiting, which is a serious hazard to the anesthetized patient during delivery. Aspiration of vomitus was the leading cause of death among 45 recently reported[19] anesthetic fatalities in obstetric patients.

Dr. John C. Dunlap, a diplomate of the American Board of Obstetrics and Gynecology, is associated with the Central Texas Clinic, Waco.

Being especially important to the mother and child during the birth process, oxygen was given as a routine measure to 799 unselected patients (with a total of 807 infants). This was made possible by pudendal block and local infiltration anesthesia, facilitated by hyaluronidase, and combined with reasonable analgesia. In 63 deliveries assisted by midforceps, there was neither mortality nor morbidity.

Oxygen deprivation holds an even greater threat for the fetus. Intrauterine anoxia was first recognized 100 years ago as an etiologic factor in certain sublethal cerebral disorders, but the mechanism responsible for the development of such disturbances is still not fully understood. It has been emphasized repeatedly that fetal deficiency of oxygen causes or contributes to most perinatal mortality.[5, 6] Complica-

tions during parturition and operative delivery enhance the risk of anoxia. The trauma caused by "forceps of necessity," in contrast to those of election, has been consistently charged with increasing fetal morbidity and mortality.

Since administration of oxygen is the most direct and specific method of increasing the oxygen content of the blood,[3, 4, 8, 12] and thereby preventing intrapartum anoxia, an effort has been made to administer 100 per cent oxygen to all parturients shortly before and during delivery, regardless of the method of delivery employed. Rarely have circumstances prevented the inclusion of this routine therapy.

METHOD OF STUDY

During the past five years, 799 unselected oxygenated patients were personally observed. Seven hundred ninety-one were delivered of single infants, of which 773 were single vertex deliveries (table 1);

TABLE 1.—*Method of Delivery of 791 Single Pregnancies.*

Method		No. Patients
Spontaneous		373
Assisted forceps		400
Low	337	
Mid	63	
Assisted breech		18
Total		791

and 8 were delivered of twins. Thus a total of 807 infants were delivered in this series. Many of the ward patients had been indifferent to the necessity for adequate medical supervision during pregnancy and had received little or no prenatal care. This was responsible for the high incidence of maternal complications (table 2).

TABLE 2.—*Maternal Complications in 95 of a Series of 799 Patients.*

Complication	No.
Toxemia (including 8 cases of convulsions)	46
Hypertensive disease	26
Antepartum hemorrhage	15
Miscellaneous	8
Total	95

The most frequent error in use of oxygen during parturition is that too little is given too late. Waters and Harris[21] were the first to emphasize that anoxia of the fetus can be recognized by changes in the fetal heart rate, and Lund[20] suggested treatment by oxygen administration. Although careful auscultation of the fetal heart gives the best information available, sole reliance on "fetal distress" may be unreliable—and may be a tardy indication of an irreversible condition, such as disruption of the placental or cord circulation.

As a routine measure to combat fetal anoxia, all patients in this series inhaled 100 per cent oxygen generally 20 to 30 minutes before and during delivery. In the normal patient the oxygen content of the arterial blood thus will be increased by about 10 per cent, which is considered adequate for protection of the fetus during the birth process. Even a slight increase in the oxygen made available to the placental site would be an important aid because the fetal blood has a greater capacity for oxygen saturation and transport than does the blood of the mother.

To insure maintenance of patient cooperation during delivery, supplementary analgesia was provided to a reasonable extent. Meperidine hydrochloride or vinbarbital sodium was slowly administered by vein just before delivery, so that the depressant would not have time to gain access to the fetal circulation.

For reasons based on a previous study[17] a catheter was rarely introduced into the bladder. Sterile pelvic examinations were performed to diagnose position and verify complete cervical dilation.

No anesthetic was administered by inhalation to these 799 patients; the respiratory route was reserved for oxygen exclusively. The anesthetic of choice was pudendal block, administered as previously described.[9, 10] I have found 1 per cent procaine containing 150 United States Pharmacopeia units of hyaluronidase* per ounce, with 0.12 cc. of epinephrine hydrochloride (1:1,000) the most satisfactory anesthetic solution. Epinephrine appears to prolong local anesthesia by retarding absorption. The enzyme hyaluronidase spreads the anesthetic agent and also, as emphasized by Frenzel,[14] increases the pliability and elasticity of the perineal tissues; hence, the incidence of lacerations is reduced.

Forceps assistance was most frequently considered necessary when labor was arrested, and gentle intervention seemed to promise more than delay. This usually occurred in association with malposition, that is, with the occiput remaining in the transverse or posterior position because of incomplete rotation and insufficient uterine force.

No standard criteria exist for use of midforceps. In this series the operation was employed as a means of assistance after the head was engaged but before the skull was on the perineum and before the sagittal suture was on the anteroposterior diameter.[16] Thus by this broad but specific definition proposed by Eastman, Titus, McCormick, and Greenhill, a total of 63 (about 8 per cent) of the single vertex deliveries were classified as assisted midforceps. Kielland

**Wydase (Lyophilized Hyaluronidase) by Wyeth.*

forceps were used in all instances, although the classical "spoon side up" application was employed only twice.

Incomplete rotations were corrected with the aid of: (1) Patient cooperation. (2) "One blade assistance" applied to the occiput, in the anterior position, or in the posterior position if easier. The corrected position was maintained during insertion of the second forceps, thus obtaining the best cephalic application possible. (Drainage of amniotic fluid, which is desirable, generally occurs upon insertion of the initial blade.) (3) Gentle traction coinciding with uterine contractions and pressure applied to the fundus.

Episiotomy was performed as necessary. To prevent blood loss, the incised margins were clamped with ring forceps as soon as feasible.

In certain instances of uterine inertia, contractions were stimulated by intramuscular injection of 0.5 to 1 minim of Pitocin. With the mother inhaling 100 per cent oxygen there was no indication for haste, especially when the fetal heart sounds continued to be satisfactory.

RESULTS

No maternal deaths occurred in this series. There were no "failed forceps," and no cesarean sections were performed after engagement had occurred. The uncorrected perinatal loss was 21 infants (2.6 per cent). The associated complications and ratio of stillbirths to neonatal deaths are shown in table 3.

TABLE 3.—*Perinatal Mortality in 807 Infants.*

Complication	Still-births	Neonatal Deaths	Total
Toxemia	3	3	6
Prematurity	0	5	5
Prolapsed cord	3	0	3
Abruption of placenta	1	1	2
Velamentous cord insertion	0	1	1
Intracranial hemorrhage	0	1	1
Congenital anomaly	0	1	1
Unexplained	1	1	2
Total	8 (1%)	13 (1.6%)	21 (2.6%)

However, among the infants delivered by assisted midforceps there was neither mortality nor morbidity. The cardiac, pulmonary, muscular, and reflex response was prompt and sustained for each of the 63 infants. This is noteworthy, even in such a small uncontrolled series. Ordinarily, in operative deliveries performed under general anesthesia, a higher percentage of infants respond poorly and show varying degrees of asphyxiation. It is, in fact, in such operative (and breech) deliveries that, in the absence of superimposed complications, routine maternal oxygenation seems of greatest clinical benefit.

The Apgar method of scoring the newborn,[1] as taught and practiced at Columbia University, was used during the latter part of this study, and was found extremely helpful. According to this method (table 4) a score is assigned which indicates the extrauterine adjustment of the neonate one minute after delivery.

TABLE 4.—*Evaluation of the Newborn Infant Method of Scoring.*[1]

Sixty seconds after the complete birth of the infant (disregarding the cord and placenta) the following five objective signs are evaluated and each is given a score of 0, 1, or 2. A total score of 10 indicates an infant in the best possible condition.

Sign	0	1	2
Heart rate	Absent	Slow (below 100)	Over 100
Respiratory effect	Absent	Slow, irregular	Good crying
Muscle tone	Limp	Some flexion of extremities	Active motion
Response to catheter in nostril (tested after oropharynx is clear)	No response	Grimace	Cough or sneeze
Color	Blue, pale	Body pink, extremities blue	Completely pink

DISCUSSION

The concept that developed from the important observations of Little, made nearly 100 years ago, has been repeatedly emphasized and documented by Courville,[7] who commented sadly that "the seed he thus sowed fell on stony ground." Recent studies by Eastman and his co-workers[11, 13, 18] leave little doubt that the numerous factors which further diminish the already sparse flow of oxygen to the fetus may produce irreversible changes in the selective areas of the nervous system and may be the chief cause of cerebral palsy. Fuldner[15] has claimed that cerebral palsy accounts for more than 9 per cent of our crippled children and has reported a series of 204 cases, in slightly more than half of which the cause "was quite evidently fetal oxygen deprivation."

Although nervous and vascular tissues are the first to be affected by oxygen deficiency,[2] the nerve cells of late phylogeny, concerned with the higher mental and motor functions, are most sensitive to anoxia. Brain damage from hypoxia, being of nontraumatic origin, would not produce immediately detectable symptoms in the newborn. Evidence of the lesions would not appear until a later stage, when the per-

formance normally to be expected of a naturally developing child would not occur.

Oxygenation is especially important for the woman in premature labor and should be provided in lieu of central nervous system depressants or hypotension-producing anesthetics. It is extremely desirable to increase the flow of oxygen to the premature infant before and during delivery, thus reducing the necessity for direct exposure of the sensitive immature tissues to oxygen during the neonatal period.

SUMMARY

It is believed that most complications in the newborn may be attributed to anoxia rather than to mechanical injury. In an endeavor to prevent intrapartum anoxia, 100 per cent oxygen was administered to 799 unselected patients before and during delivery of 791 single infants and 8 pairs of twins.

The most significant advantage of routine oxygenation was observed among the 63 deliveries assisted by midforceps in the series, in which group there was neither mortality nor morbidity.

This study accents the importance of records—proper classification of forceps procedures and careful description of newborn responses.

Pudendal block and local infiltration anesthesia, facilitated by hyaluronidase, and combined with reasonable analgesia, constitutes the safest, simplest, and most effective means of making possible the routine use of oxygenation during parturition.

The value of prophylactic oxygen therapy in the numerous maternal or fetal physiopathologic states frequently encountered during the birth process deserves further study.

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CASE REPORTS

Vaginal Delivery Of Uniumbilical - Tribachi - Dicephalic Monster

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THE UNUSUAL experience of delivering a uniumbilical-tribachi-dicephalic monster is reported herewith.

CASE REPORT

The patient, a 27 year old white woman gravida 2 para 1 was admitted to the Hopkins County Memorial Hospital, Sulphur Springs, Texas, May 30, 1955. Her pregnancy seven years earlier had been uneventful and delivery was normal. The baby did well until it reached the age of 4

years at which time a malignancy was discovered. The child died one year later.

Present Pregnancy.—The first day of the patient's last menstrual period was August 7, 1954. The estimated date of confinement was May 14, 1955. The prenatal course was normal. On April 12, while doing a routine prenatal examination we could palpate one head in the pelvis and another in the right lower quadrant of the abdomen. Fetascopic examination revealed two different fetal heart beats. Roentgenograms confirmed our physical findings of two

Dr. Lester A. Hodges and his co-author are general practitioners.

Pregnancy was normal except for indications that the fetus might be conjoined twins. One head was delivered without complication. Use of pressure and manipulation made possible the delivery of the hips and extremities, and the second head followed in the usual manner for breech presentation. The infant died; the mother was in good condition.

heads and showed two skeletal systems lying side by side. Because of their constant relationship one to the other in position, we thought at this time there was a possible chance for this to be conjoined twins. The roentgenograms were sent to an obstetrician. It was his impression that a diagnosis of conjoined twins could not be ruled out, but with reports of dystocia uncommon, he would allow the patient to go to term and attempt delivery from below. On May 27 physical examination revealed blood pressure 118/70, urine negative, and no edema. The fundus was two finger breadths below the xiphoid process. One head palpated in the pelvis and the other in the right lower quadrant. The cervix was 2 cm. dilated and 50 per cent effaced. The patient was in excellent physical condition, and we elected to let her wait and go into labor spontaneously.

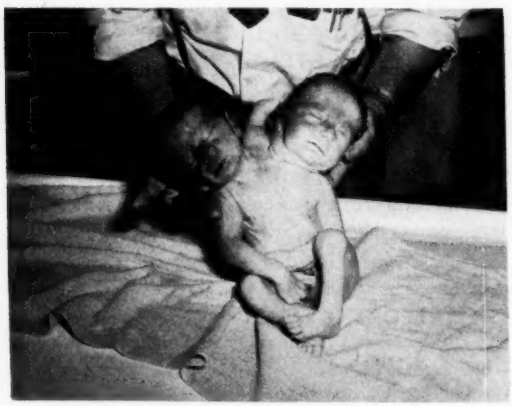

Fig. 1. Photograph of uniumbilical-tribachi-dicephalic monster.

Labor.—The patient began having uterine contractions at 6:30 p. m. May 30. She was admitted to the hospital at 7:30 p. m. At 7:40 p. m. the cervix was 5 cm. dilated and 75 per cent effaced, and the head was at station 0. Demerol, 100 mg., and Hyoscine, grains 1/150, were given intramuscularly immediately. The cervix was completely dilated and the head was at station plus 2 at 8:45 p. m.

Delivery.—The patient was prepared for delivery; the urinary bladder was emptied by catheterization. Low forceps were applied, and a median episiotomy was performed. The head was extracted easily to where the occiput was resting on the vulva in an occiput anterior position. There was rapid external rotation of the head to occiput posterior after the forceps were released. Moderate traction downward on the head failed to deliver the anterior shoulder; consequently, the operator's index finger was inserted under the pubis for exploration, and strong downward traction applied. The exploring finger encountered a short nublike extremity extending cephalad from the anterior shoulder, and with the strong traction continued, the process was brought under the symphysis. On visualization the process was found to be a rudimentary arm without a hand. Further exploration failed to divulge an anterior axilla, and it was found that the anterior shoulder just delivered was connected with the undelivered head. This made certain the provisional diagnosis of conjoined twins.

At this stage of the delivery the posterior head was lying on the perineum and the anterior head was in an arrested state over the symphysis, and it seemed that vaginal delivery would be impossible without decapitation and internal version. However, the operator next applied strong upward traction on the delivered head with the assistant pressing down forcibly on the breech. This maneuver delivered the posterior shoulder, and with the pubis acting as a fulcrum or pivot, the delivered head was brought upward over the maternal pubis with the hips and extremities of the baby following. The second head was then delivered without difficulty in the usual manner for breech presentation. The episiotomy was repaired. There was very moderate blood loss.

The patient remained in good condition throughout the operation. Delivery time was 10 minutes. The infant weighed 8 pounds 4 ounces. The infant died during delivery.

ADDENDUM

The patient has a twin pregnancy at the present time. Roentgenograms reveal no abnormalities. The fetal bone structures are visualized well, and we expect them to be normal.

Dr. Hodges and Dr. Kirkpatrick, 395 Houston, Sulphur Springs.

PROCTOLOGY AWARD

The International Academy of Proctology has announced that it will give a cash prize of $100 and a certificate of merit for the best unpublished article on proctology or allied subjects. The competition is open to all physicians in all countries. Entries are limited to 5,000 words, must be typewritten in English, and must be submitted in five copies. All entries must be received at the Academy's offices, 147-41 Sanford Avenue, Flushing, N. Y., no later than February 1.

Meningococcemia In Two Siblings

With Special Reference To Gangrene as a Complication In One Case

FETHI TEVETOGLU, M. D.; CARLOS P. TREVINO, M. D.; and CHI-HAO LEE, M. D.

Corpus Christi, Texas

FOR MANY years meningococcemia infection, in both meningitic and septicemic forms has been recognized. Since Herrick's[12] classical report in 1918, many excellent reports have been published. The clinical picture varies in duration from acute to chronic and in severity from a mild to a fulminating and highly fatal form, the so-called Waterhouse-Friderichsen syndrome. There are also cases with recurrent infections.

Dr. Fethi Tevetoglu and his associates are on the house staff of the Driscoll Foundation Children's Hospital; he and Dr. Trevino are second year residents, and Dr. Lee is assistant medical director.

Multiple cases of meningococcic infection in the same family are rare, as is the complication of gangrene of the extremities. Two cases of meningococcemia with meningitis occurring in siblings, aged 5 and 6 years, are reported. One was complicated by extensive gangrene of the skin and the toes, necessitating disarticulation of both feet. Both patients recovered.

Severe, fulminating meningococcemia fortunately is rare. Sweet and his associates[27] reported only 4 instances among 296 patients with meningococcic infections.

Gangrene of the extremities from any cause is rarely encountered in the pediatric age group. Occasionally it is secondary to severe fulminating meningococcic infection. Only a few cases resulting from this cause have been reported even in adults. References to gangrene of the skin and extremities are found in only 14 cases in the recent pediatric literature dealing with meningococcic septicemia. Multiple cases of meningococcemia and meningitis in the same family are known to be infrequent.

Because of the rarity of gangrene due to meningococcic infection in children and of the occurrence of the infection in siblings, we believe the report of the following cases may be of interest.

REPORT OF CASES

CASE 1.—Raul V., a 5 year old Latin-American boy, was admitted to the hospital on February 20, 1955. One week prior to admission he had mild symptoms of upper respiratory infection. Four days later, he developed epistaxis, high fever, headache, vomiting, and mild diarrhea. On the morning of admission he became prostrated, and multiple ecchymotic areas began to appear on his body.

Physical examination revealed rectal temperature of 103 F., blood pressure 95/60 mm. of mercury, pulse 132 per minute, respiration 36 per minute. He was alert, complaining of generalized pain, especially in the legs and feet. There were extensive ecchymotic areas scattered over the skin (fig. 1a). There were hemorrhagic lesions in the conjunctivas and in the mucous membrane of the mouth. No evidences of vascular collapse or of meningeal involvement were found. Laboratory findings on admission were as follows: red blood count 3,600,000 per cubic millimeter with hemoglobin 11 Gm. per 100 ml.; white blood count 25,500 per cubic millimeter with segmented cells 43 per cent, stabs 42 per cent, and eosinophils 1 per cent; platelets 60,000 per cubic millimeter; and bleeding time 2 minutes 30 seconds, coagulation time 15 minutes 20 seconds, and prothrombin time normal. Neisseria meningitidis was identified from scrapings taken from an ecchymotic area. Spinal puncture yielded clear fluid under normal pressure; the cells and protein content were normal; no bacteria were found on the direct smear. Urinalysis showed 3 plus albumin. Throat culture revealed Streptococcus viridans. Blood and spinal fluid cultures were positive for Neisseria meningitidis. A chest roentgenogram was essentially negative.

Intravenous fluid administration was started immediately; 2 Gm. of sulfadiazine were given initially, followed by 0.12 Gm. per kilogram of body weight per day intravenously for the next 48 hours and then 1 Gm. orally every six hours. Procaine penicillin, 400,000 units, was given intramuscularly every 12 hours.

The morning after admission the patient appeared stuporous, and the blood pressure had fallen to 70/40 mm. of mercury. He was given 10 cc. of adrenal cortical extract intravenously, and cortisone, 200 mg. daily, was started. On the third day of hospitalization the blood pressure rose to 100/60. The child continued to be febrile and stuporous. Stiffness of the neck was observed at that time. The toes on both feet began to show signs of gangrene; the pulsation in both dorsalis pedis arteries was absent. On February 28, the patient became much less lethargic, and nuchal rigidity had disappeared; all toes became definitely gangrenous, appearing black and dry (fig. 1b). Many of the ecchymotic areas, especially those over the bony prominences became ulcerated and necrotic. The temperature returned to normal, after one week of hospitalization. Sulfadiazine was given for two weeks, penicillin for three weeks, and cortisone for ten days. Chickenpox, which developed 19 days after admission, delayed the surgical removal of the toes. The disarticulation was performed on March 28, about a month after the first appearance of

gangrene. Secondary closure of the wound and skin graft was performed three weeks later. The wounds healed satisfactorily (fig. 1c).

CASE 2.—Richard V., a 6 year old Latin-American boy, was admitted about 33 hours after admission of his younger brother, Raul V. Onset of the illness was less than four hours prior to admission with a sharp abdominal pain, vomiting, diarrhea, fever, and irritability. Shortly afterwards small hemorrhagic spots began to appear on his body. The patient was conscious; his pulse was regular, rate 180 per minute; blood pressure was 100/50 mm. of mercury; and temperature was 105 F. There were small generalized petechiae; otherwise the physical examination was essentially negative. Neurologic signs were present.

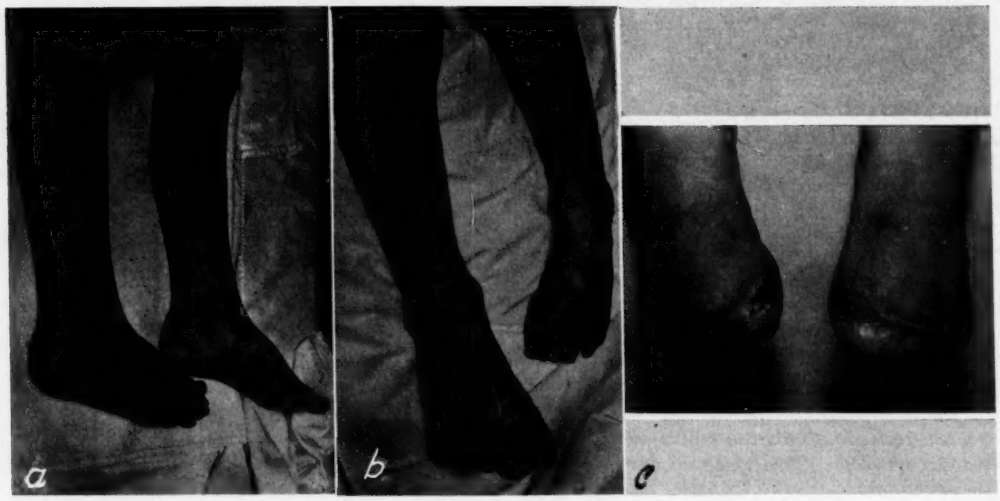

Fig. 1. Case 1. a. Ecchymosis on the legs is evident at the time of admission.
b. Gangrene of the toes as seen two weeks after the onset.
c. Healed wounds following disarticulation of the toes.

Laboratory findings on admission were as follows: red blood count 4,800,000 per cubic millimeter with hemoglobin 12.5 Gm. per 100 ml.; white blood count 27,150 per cubic millimeter with segmented cells 75 per cent, stabs 16 per cent, and lymphocytes 9 per cent; platelets 146,000 per cubic millimeter; bleeding time 2 minutes 30 seconds; and coagulation time 8 minutes 30 seconds. Procaine penicillin, 800,000 units daily, was started. The next morning the child was afebrile and alert, with no complaints. Twenty-four hours later temperature rose to 104 F., and the patient became slightly lethargic. Nuchal rigidity and positive Kernig's and Brudzinski's signs were present.

Study of a spinal tap revealed opalescent fluid under increased pressure (190 mm.) with 7,200 white blood corpuscles per cubic millimeter, 100 per cent polymorphonuclear leukocytes; sugar 29 mg. per 100 ml.; and total proteins 106 mg. per 100 ml. Spinal fluid and blood cultures were positive for Neisseria meningitidis. Sulfadiazine was administered intravenously for two days, followed by oral administration. Cortisone, 200 mg., was administered daily. The patient improved rapidly, the temperature became normal, and meningeal signs disappeared within three days. Sulfadiazine was continued for 12 days, penicillin 14 days, and cortisone 10 days. The child was discharged in good condition on March 7, 1955.

REVIEW OF LITERATURE

Even a limited survey of the voluminous literature on meningococcic infection demonstrates clearly that multiple cases in the same family are rare.

In review of the literature, Hoyne and McEnery[15] reported 3 patients, aged 10 years, 3½ years, and 16 months respectively in one family, with the onset of illness over a period of 16 days. They also cited two other families with multiple infections, 2 children in one, and 1 adult and 3 children in the other family. In 1932, Saldun[23] reported the simultaneous infection in 2 brothers from Uruguay. Gilmore and Ashworth[8] in 1937 reported 2 fulminating cases in the same family. McLeod[18] mentioned in 1941 in his report 2 cases occurring in one family. Rotondo and Handelman[22] in 1945, added to the literature 3 cases of meningococcemic meningitis in a Negro family.

Gangrene of the extremities and that involving large areas of the skin is an infrequent complication in meningococcic infections. No mention was made of gangrene in Slesinger's[24] discussion, in 1933, on the complications and sequelae of meningococcic meningitis in infancy and childhood. Heller and Alvard[11] reviewed 40 cases of gangrene of the extremities in the newborn due to different causes, none of which was meningococcic infection. In 1948, Banks,[1] in his review of meningococcic disease, mentioned that ulcers of the skin and subcutaneous tissue occasionally resulted from the breaking down of massive purpuric lesions and that scarring might result.

Blanchier,[3] in 1918, reported 16 cases of meningococcic purpura in children, only 1 of whom developed

gangrenous changes. This was a boy of 6 months who was treated with antimeningococcic serum but finally died. Levy,[17] in 1927, reported a case with gangrene of fingers following meningitis in a child.

Poinso and associates,[21] in 1939, reported the case of a girl who had meningococcic meningitis and gangrenous purpura and who recovered on treatment with antimeningococcic serum, vitamin A, and small blood transfusions. Marie and associates,[20] in 1946, added 3 cases of patients 2 years 3 months, 2 years, and 1 year 10 months old (2 girls and a boy) who recovered on treatment with sulfonamides and antimeningococcic serum.

Hill and Kinney,[14] in 1947, recorded gangrenous purpura of the extremities in 2 patients recovering from acute meningococcemia. In 1 of these, necrosis of all the toes occurred and amputation was necessary.

Malagueta and Renault,[19] in 1947, reported a boy, aged 14 years, with meningitis who was in a coma on admission and showed intense cyanosis of both feet progressing to gangrene several days later. The patient recovered on sulfadiazine and penicillin therapy. Both feet were amputated.

DeFuccio and Dresner,[5] in 1949, reported the bilateral amputations of the lower third of both legs in a 7 year old Negro boy who was treated with sulfadiazine and intrathecal and intramuscular penicillin.

Dunn,[6] in 1951, reported 1 case of gangrene secondary to meningococcic septicemia in a 4½ month old boy with recovery, and he reviewed 9 other cases occurring in children and adults.

Herrmann,[13] in 1954, reported 4 cases in children who showed the symptoms of the so-called Waterhouse-Friderichsen syndrome with patchy areas of gangrene on the face and extremities due to meningococcic septicemia. Three of the 4 patients were given heparin in addition to antibiotics and recovered. He postulated that gangrene in meningococcemia was due to stasis of blood in the vessels, and destruction of tissue could be prevented by anticoagulant.

SUMMARY

Two cases of meningococcemia with meningitis occurring in siblings, aged 5 and 6 years, are reported. One was complicated by extensive gangrene of the skin and the toes, necessitating disarticulation of both feet. Both patients recovered after treatment with sulfadiazine, penicillin, and cortisone. A review of the literature regarding multiple infections in the same family and gangrenous complications in meningococcic infection is also presented.

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CLINICOPATHOLOGIC CONFERENCES

Case 1

MEDICAL STAFF, HARRIS HOSPITAL

Fort Worth, Texas

A 75 YEAR OLD white woman entered the hospital because of severe substernal pain that had been present for about four and one-half hours. She had worked in her lawn the day preceding onset of the pain. The pain was persistent in spite of her taking nitroglycerine tablets. She had had episodes of chest pain, radiating to both arms, for the past several years, but this had always been relieved by nitroglycerine tablets under the tongue. The pain associated with the present attack was described as a squeezing type which radiated into both arms and through to the back and neck. She also had severe sweating and weakness, but no shortness of breath. After about four hours she was given an injection of Demerol, which produced relief from the pain.

The patient was known to have had hypertension for several years; the exact duration and amount of elevation was not known. Two months previously she had had an episode of dark stools, identified as melena. At this time radiologic studies showed that she had a hiatal hernia. No other abnormality was demonstrated in the gastrointestinal tract. Many years previously she had had both fallopian tubes and ovaries removed. As a child she was thought to have had malaria.

Physical examination revealed an aged woman lying comfortably in bed with no complaints. Her color appeared good, and blood pressure was 96/60. Pulse was regular, about 80 per minute. She had no dyspnea, but on turning in bed, she coughed occasionally. Eyes were normal. Funduscopic examination showed no abnormalities. The throat was negative. Moderate venous distention in the neck was observed. A marked kyphosis of the dorsal spine was present. The percussion note over both lungs was resonant. Numerous medium rales were heard in both lung bases. No dullness was found nor other evidence of consolidation. The heart seemed to be slightly enlarged with the apex beat in the fifth interspace in the midclavicular line. No murmurs nor friction rub was heard.

On admission the urine specific gravity was 1.028; there was a trace of albumin; sugar and acetone tests were negative. Urine sediment contained 2 to 3 white blood cells, rare red blood cells, and no casts. A VDRL test for syphilis was nonreactive. The hematocrit level was 38 volumes per cent. Hemoglobin was 12.85 Gm. per 100 cc.; white blood cells numbered 9,250 per cubic millimeter, with 1 per cent eosinophils, 4 per cent stabs, 80 per cent segmented cells, 11 per cent lymphocytes, and 4 per cent monocytes.

After admission to the hospital the patient began to have vomiting with nausea. The temperature rose slowly to 102 F. on the fourth day and subsided to normal after the sixth day. She was given Purodigin, Demerol, and Thorazine. Except for persistent nausea and vomiting the course was fairly satisfactory. An electrocardiogram on the first hospital day revealed auricular rate 60, ventricular rate 60. The PR interval was 0.13 and QRS duration 0.10 seconds. Rhythm was regular. P waves were normal. QRS showed small Q_3, AVF, and V leads. A deep Q_3 RST segment was depressed slightly in L_1 and VL leads. There was very slight elevation in L_3 and AVF leads with moderate elevation in V_1 to V_5. Terminal inversion of the T waves occurred in V_1 to V_5 leads. Later electrocardiograms showed these abnormalities to be accentuated (fig. 1).

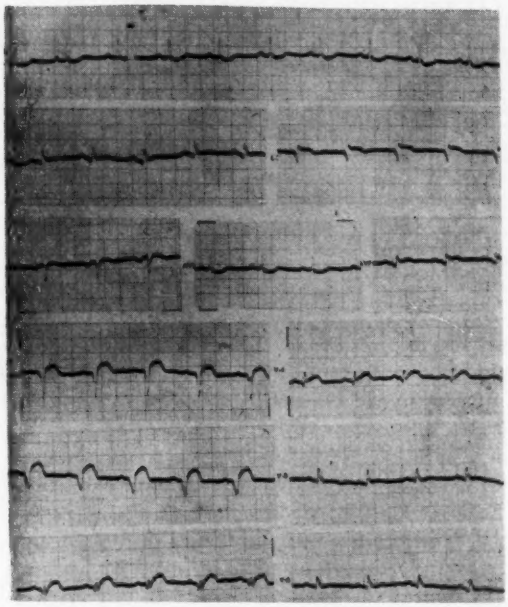

Fig. 1. Electrocardiographic tracing obtained on the fifth hospital day.

A roentgenogram of the chest on the sixth day (fig. 2) showed "possible minute bilateral pleural effusions; minor degree of generalized pulmonary vascular congestion; marked cardiac enlargement." On the ninth hospital day a loud blowing systolic, grade 3 murmur was heard over the fourth interspace and a thrill was palpable. Blood pressure at this time was 93/60. The liver at this time was just palpable and tender. Nausea and vomiting continued, and it was necessary to administer fluids intravenously. Episodes of cyanosis occurred at intervals. The patient refused to have an oxygen tent. The murmur over the precordium remained unchanged. On the twenty-third hospital day she had a recurrence of substernal pain with cyanosis. Pulse was 100 per minute, blood pressure 112/88. The patient failed to respond to treatment, gradually becoming weaker, and died on the twenty-ninth hospital day.

CLINICAL DISCUSSION

DR. DEWITT NEIGHBORS: This patient's illness causing her hospital admission would be generally considered typical of an acute myocardial infarction.

Participants in this conference were Dr. C. T. Ashworth (pathologist), Dr. Albert M. Goggans (internist), Dr. Otto Grunow (radiologist), and Dr. DeWitt Neighbors (internist).

The substernal location of a constricting, squeezing type of pain, radiating to arms, neck, and back, followed by nausea and vomiting and temperature elevation are all consistent with myocardial infarction. For the previous several years there had been episodes of chest pains which symptomatically were like angina pectoris, and this diagnosis is made more likely by the prompt relief she had from taking nitroglycerin.

We are informed that a few weeks before the patient had had evidence of gastrointestinal bleeding, and at that time a hiatus hernia was demonstrated by radiologic examination. It is well known that a hiatus hernia may cause substernal pain because of over distention, constriction, or incarceration of the hernia. The reflex arc for this pain may involve the same dermatomes as those from myocardial

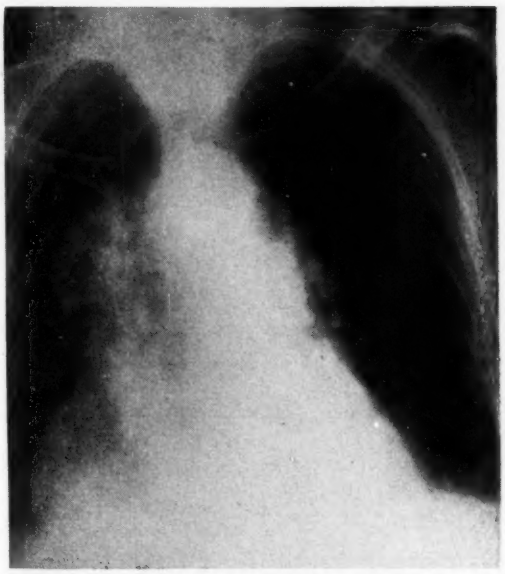

Fig. 2. Roentgenogram of the chest on admission.

ischemia so that the pain from hiatus hernia may be a substernal pressure or ache with radiation to the back, the neck, or the arms. Factors causing hiatus hernia pain may also lead to inversion of T waves in the electrocardiogram and thereby cause further confusion.

The protocol states that on the first hospital day an electrocardiogram was made which revealed normal intervals and a regular rhythm. A small Q wave was noted in the AVF and V leads; the width of the Q waves and their potential as compared to their respective R waves is not stated. There was a small Q in lead II and a deep Q_3, which adds some significance to the Q in AVF. The ST segment was slightly depressed in AVL and lead I and slightly elevated in AVF. There was moderate elevation of ST with terminal T wave inversion in leads V_1 to V_5. In all probability subsequent cardiograms would have been more characteristic, but from this record and the clinical picture we can make the diagnosis of an anteroseptal infarct, with probable extension of the infarct to involve the diaphragmatic surface of the left ventricle. It would be a fair assumption that the infarct involved the interventricular septum as well as the adjacent free wall of the left ventricle anteriorly and posteriorly.

The patient's hospital course was not remarkable for the first several days. There was some evidence of mild left ventricular failure for which a digitalis preparation was given. There was persistent nausea and vomiting. On the ninth hospital day there was noted a departure from the previous physical findings in that there was heard a loud blowing systolic grade 3 murmur over the fourth interspace, and in this area a systolic thrill was palpated. The murmur continued until the end. It was also noted on the ninth hospital day that the liver was palpable. It would be helpful to know of any changes in the intensity of the heart sounds or whether the liver continued to enlarge or other evidences of peripheral edema supervened. However, the type and location of the murmur and thrill coming on within the first seven or eight days following an acute myocardial infarction are typical of those found with an acute perforation of the interventricular septum. A similar murmur without a thrill may be caused by a rupture of a papillary muscle, but this murmur is usually maximal over the apex and may have and often has a bizarre quality. The course of patients after papillary muscle rupture is a dramatically downhill one. Another type of postinfarction murmur without a thrill may be produced by a ventricular wall aneurysm, but this murmur is usually biphasic and of a different quality and intensity as compared to a septal perforation.

Perforation of the interventricular septum is an infrequent complication of myocardial infarction. It nearly always occurs within the first week after the infarction. Most patients with this injury do not live more than three or four weeks. Two cases have been reported with longer than usual life spans. One patient lived four years and the other four years and 10 months after the characteristic murmur and thrill were first observed. After the development of the perforation, increased pulmonary artery pressure develops with increased pulmonic second sound, progressive development of right heart failure, venous congestion, liver engorgement, and peripheral edema.

In summary, then, we have a 75 year old woman patient, with a known hypertension and angina pectoris for several years, who developed typical symptoms of acute myocardial infarction. The electrocardiogram indicates an anteroseptal infarct with

probable involvement of the posterior free wall of the left ventricle and the intervening interventricular septum. Sometime before the ninth day of the illness there occurred a perforation of the infarcted interventricular septum followed by increasing evidence of congestive heart failure and death on the twenty-ninth day of the illness.

COMMENT ON ROENTGEN STUDY

DR. OTTO GRUNOW: The roentgenogram of the chest reveals an obviously markedly enlarged heart. This was probably a portable film, a fact which should be considered in the interpretation of this study. There is clouding in the lower chest fields, which may be due to an accumulation of pleural fluid. Kyphosis is apparent. The roentgen findings include, then, a markedly enlarged heart, emphysema, probable pleural effusions, bilaterally, and dorsal kyphosis.

CLINICAL DIAGNOSIS

DR. NEIGHBORS: My diagnosis is

1. Myocardial infarction involving the anteroseptal area and the posterior free wall of the left ventricle.
2. Perforation of the interventricular septum at the site of infarction.
3. Congestive heart failure.
4. Preceding angina pectoris and hypertension.

PATHOLOGIC FINDINGS

DR. C. T. ASHWORTH: As the clinical and electrocardiographic studies indicate, this patient did have an infarct of the myocardium. This lesion was in an anteroseptal position involving the lower one-half of the septum and the apex and the lower portion of the anterior wall of the left ventricle. The infarct also extended into the lower portion of the posterior wall of the left ventricle. The infarct was due to a calcified atheromatous plaque producing complete occlusion of the descending branch of the left coronary artery. Extensive atheromatous narrowing was found also in the circumflex branch of the left, and in the right coronary artery.

This myocardial infarct revealed gross and microscopic changes indicative of a few weeks' duration, consisting of autolysis of much of the necrotic tissue, and well established repair changes (fig. 3). The duration of the infarct lesion is considered to be consistent with the clinical onset of severe substernal pain 29 days prior to death.

The reason for selection of this case for discussion is the development of a perforation of the interventricular septum at the site of infarction (fig. 4). This perforation was 12 by 8 mm. in size, located in the lower portion of the interventricular septum. The larger opening was on the left ventricular side of the septum. This perforation, leading to a left to right shunt of blood, would readily account for the sudden development of the systolic thrill and murmur over the precordium. The perforation would be expected to cause a reduction in effective cardiac output and would thus worsen the effects of an already weakened myocardium. One might expect an increase in right heart failure with increase in venous pressure and congestive enlargement of the liver. There was some evidence in the viscera of increased venous engorgement, but relatively slight central degenerative changes in the liver were found.

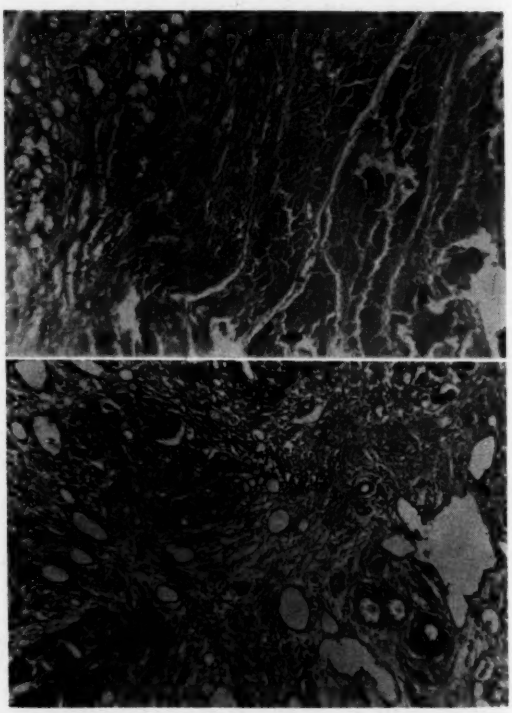

Fig. 3. Above. Photomicrograph of myocardial infarct showing coagulative necrosis and partial autolysis of necrotic muscle.

Below. Photomicrograph of myocardial infarct showing the area of the repair process.

Although rupture of an infarct of the myocardium is said to occur in approximately 8 per cent of cases, this is in the great majority a rupture of the anterior or sometimes the posterior wall, leading to sudden death from hemopericardium. Only rarely does the rupture involve the interventricular septum as it did

in this patient. According to Fowler and Failey,[1] this complication may be diagnosed during life on the basis of the history and physical findings of a myocardial infarction, the development of signs of a ventricular septal defect, particularly the sudden appearance of a loud harsh systolic murmur and a thrill along the left sternal border, and the development of signs of right ventricular failure. The condition most likely to be confused with a perforated septum is rupture of a papillary muscle of the left ventricle, following myocardial infarction. In this complication the murmur is louder, it is nearer the apex, and left rather than right ventricular failure develops.

The factors which are considered to be predisposing to rupture of the infarcted interventricular septum follow: (1) Age—rupture usually occurs in patients over 65. (2) Sex—it is more common in males. (3) Exertion—in mental patients who are poorly controlled and will not remain quiet, rupture of the heart after infarction is a fairly common complication. (4) The absence of scars in the myocardium from previous infarction—perforation is less likely if a preceding scar in the area of fresh infarction is present. (5) Local changes in the infarct—those cases with marked local polymorphonuclear infiltration are probably more prone to perforation; this is due to the liberation by the leukocytes of proteolytic enzymes, which cause digestion, softening, and weakening of the necrotic muscle.

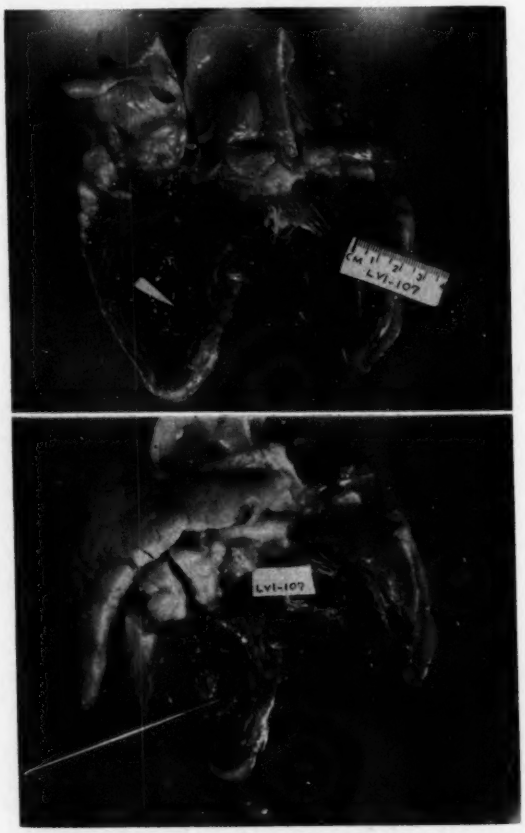

Fig. 4. Above. Gross photograph of the heart showing perforation of the interventricular septum.
Below. Gross photograph of the heart showing the septal perforation at the site of the myocardial infarct.

It is of interest that some patients with perforation of the infarcted septum may survive for a considerable period of time, up to several years. Occasionally such lesions are discovered at autopsy. Clinical symptomatology as previously mentioned should lead one to suspect it. This long survival with persistence of a septal defect assumes particular importance at this time because of the feasibility of intracardiac repair in properly selected cases.

Regarding the hiatal hernia noted by previous roentgenologic study, this was demonstrated as a small herniation of a segment of stomach into the thoracic cavity through an enlarged esophageal hiatus. A small eosphageal diverticulum of the pulsion type was found in the midesophagus. No active lesion in the gastrointestinal tract to explain the previous melena was found. This may have been due to esophagogastric erosions which had healed. The radiologic findings in the chest could be explained by small bilateral pleural effusions of 200 cc. which were present and by pulmonary edema and acute hyperemia which were found.

In summary, the pathologic findings included:

1. Myocardial infarct of the left ventricle involving the interventricular septum and the anterior and posterior walls of the ventricle, of approximately one month duration.
2. Extensive coronary atherosclerosis with obstruction of the descending branch of the left coronary artery by calcified atheroma.
3. Perforation of the interventricular septum at the site of infarction.
4. Acute pulmonary edema and passive hyperemia.
5. Moderate acute passive hyperemia of the liver.
6. Hiatal hernia.

SUMMARY OF CLINICAL ASPECTS

DR. ALBERT M. GOGGANS: There are four things which should come to mind when a systolic sound occurs in the first few days following a myocardial infarction. The first of these is a pericardial rub. This is usually recognized by its transient nature and the usual development of a to and fro component. Second is a functional systolic murmur due to cardiac dilatation. This usually develops gradually, is maximal at the apex, and is associated usually with cardiac failure. A third is a ruptured papillary muscle.

This usually develops suddenly, gives a loud systolic or systolic-diastolic murmur maximal at the apex, and is rapidly followed by the development of acute pulmonary edema and a rapid exodus. The fourth is a ruptured interventricular septum with the sudden development of a systolic murmur and thrill at the fourth or fifth left interspace.

It is also interesting to speculate about how much part a rupture of the interventricular septum plays in the development of the heart failure which usually follows: These ruptures are usually small and occur low in the interventricular septum. We know from experience in congenital defects of the interventricular septum that the left to right shunts caused by defects in the interventricular septum usually do not cause increasing cardiac strain and heart failure. On the other hand, high interventricular septal defects cause early pulmonary hypertension, increased right ventricular pressure, and heart failure. Thus it could be that the heart failure which develops may be due primarily to the fact that it is usually a massive infarction which results in rupture of the septum. The failure may reflect more the amount of myocardial injury than the presence of the rupture alone.

A final observation worthy of mention is that the clinician and the pathologist should work together more closely in the detection of these ruptures of the septum. Many of them are probably still missed. The clinician should be more diligent in his search for the presence of systolic murmurs, and when these are noted, the information should be passed on so the pathologist can make a more diligent search. It is a fact that these may be easily overlooked at autopsy. Frequently they are small and may be covered with small thrombi in the trabeculated portion of the septum.

REFERENCES

1. Fowler, N. O., Jr., and Failey, R. B., Jr.: Perforation of Infarcted Interventricular Septum; Report of Two Cases, One Diagnosed Antemortem, Am. J. M. Sc. 215:534-541 (May) 1948.

PUBLIC HEALTH GRANTS AID NURSES

The Public Health Service will assist 650 to 700 graduate nurses in further professional education this year under a new program enacted at the past session of Congress. Grants totaling nearly $2 million have been made to 56 schools of nursing and schools of public health throughout the United States and in Puerto Rico. From these grants, the schools are awarding traineeships to qualified nurses enrolled in courses in nursing administration, supervision, and teaching. Among the schools receiving grants was the School of Nursing, University of Texas Medical Branch, Galveston.

It is probable that the first Texas playwright was a physician, Dr. John S. Ford, San Augustine, who joined a local dramatic group and wrote "A Stranger in Texas," about 1839.—Dr. J. M. Coleman, Austin.

MEDICAL NEWS

★ Coming Meetings

Texas Medical Association, Dallas, April 27-May 1, 1957. Dr. Milford O. Rouse, Dallas, Pres.; Mr. C. Lincoln Williston, 1801 North Lamar Blvd., Austin, Executive Secy.

American Medical Association, Clinical Meeting, Seattle, Nov. 27-30, 1956. Dr. Dwight H. Murray, Napa, Calif., Pres.; Dr. George F. Lull, 535 North Dearborn, Chicago 10, Secy.

Current Meetings

NOVEMBER

American Academy of Obstetricians and Gynecologists, Chicago, Nov. 7-9, 1956. Dr. Ralph E. Campbell, Madison, Wisc., Pres.; Dr. C. Paul Hodgkinson, 116 S. Michigan Blvd., Chicago 3, Secy.

American Cancer Society, New York, Oct. 28-Nov. 2, 1956. Dr. G. V. Brindley, Temple, Pres.; Mr. M. R. Runyon, 47 Beaver, New York, Executive Vice-Pres.

American Public Health Association, Atlantic City, Nov. 12-16, 1956. Dr. Ira V. Hiscock, New Haven, Conn., Pres.; Dr. R. M. Atwater, 1790 Broadway, New York 19, Executive Secy.

Southern Medical Association, Washington, D C., Nov. 12-15, 1956. Dr. W. Raymond McKenzie, Baltimore, Pres.; Mr. V. O. Foster, 1020 Empire Bldg., Birmingham 3, Secy.

Texas Neuropsychiatric Association, Dallas, Nov. 30-Dec. 1. Dr. John L. Otto, Galveston, Pres.; Dr. Clarence S. Hoekstra, 2600 Wellborn, Dallas, Secy.

Blackford Memorial Lectureship (cancer), Denison, Nov. 13, 1956. Dr. John D. Gleckler, 211 N. Fannin, Denison, Chm.

DECEMBER

Radiological Society of North America, Chicago, Dec. 2-7, 1956. Dr. Clarence E. Hufford, Toledo, Ohio, Pres.; Dr. D. S. Childs, 713 E. Genesee, Syracuse 2, N. Y., Secy.

Southern Surgical Association, Boca Raton, Fla., Dec. 4-6, 1956. Dr. Deryl Hart, Durham, N. C., Pres.; Dr. George G. Finney, 2947 St. Paul, Baltimore, Secy.

Private Clinics and Hospitals Association of Texas, Dallas, December 8-9, 1956. Dr. J. P. Anderson, Brady, Pres.; Mr. C. H. Rugeley, Wharton, Secy.

Texas Academy of Internal Medicine, Dallas, Dec. 8-9, 1956. Dr. DeWitt Neighbors, Fort Worth, Pres.; Dr. Hugo Engelhardt, 1216 Main, Houston, Secy. Meetings restricted to members.

Texas Association of Blood Banks, Dallas, Dec. 1, 1956. Dr. O. J. Wollenman, Jr., Fort Worth, Pres.; Miss Marjorie Saunders, 3707 Gaston Ave., Dallas, Secy.

Texas Division, American Cancer Society, Dallas, Dec. 7-8, 1956. Mr. Leonard M. Gunderson, Amarillo, Pres.; Mr. Curt W. Reimann, 1609 Colorado, Austin, Executive Director.

Texas Rheumatism Association, Dallas, Dec. 7, 1956. Dr. Frank F. Parrish, Jr., Houston, Pres.; Dr. Warren W. Moorman, 901 W. Leuda, Fort Worth, Secy.

Texas Society of Ophthalmology and Otolaryngology, Dallas, Dec. 7-8. Dr. Kelly Cox, Dallas, Pres.

Texas State Board of Medical Examiners, Fort Worth, Dec. 6-8, 1956. Dr. M. H. Crabb, 1714 Medical Arts Bldg., Fort Worth, Secy.

National and Regional

American Academy of Allergy, Los Angeles, Feb. 4-6, 1957. Dr. Carl E. Arbesman, Buffalo, N. Y., Pres.; Dr. Francis C. Lowell, 65 E. Newton, Boston, Secy.

American Academy of Dermatology and Syphilology, Chicago, Dec. 8-13, 1956. Dr. George M. Lewis, N. Y., Pres.; Dr. James R. Webster, 55 E. Washington, Chicago 2, Secy.

American Academy of General Practice, St. Louis, March 25-28, 1957. Dr. J. S. De Tar, Milan, Mich., Pres.; Mr. Mac F. Cahal, Volker Blvd. at Brookside, Kansas City 12, Executive Secy.

American Academy of Ophthalmology and Otolaryngology, Chicago, Oct. 13-18, 1957. Dr. Earling W. Hansen, Minneapolis, Pres.; Dr. W. L. Benedict, 100 First Ave. Bldg., Rochester, Minn., Secy.

American Academy of Pediatrics, Chicago, Oct. 5-10, 1957. Dr. Edgar E. Martmer, Detroit, Pres.; Dr. E. H. Christopherson, 1801 Hinman Ave., Evanston, Ill., Secy.

American Association for Thoracic Surgery, Chicago, May 4-7, 1957. Dr. Cameron Haight, Ann Arbor, Mich., Pres.; Dr. Hiram T. Langston, 600 S. Kingshighway, St. Louis 10, Mo., Secy.

American Association of Genito-Urinary Surgeons, Hot Springs, Va., May 1-3, 1957. Dr. Archie L. Dean, New York, Pres.; Dr. John A. Taylor, 2 E. 54th St., New York 22, Secy.

American Association of Obstetricians and Gynecologists, Hot Springs, Va., Sept. 5-7, 1957. Dr. F. Bayard Carter, Durham, N. C., Pres.; Dr. E. Stewart Taylor, University of Colorado School of Medicine, 4200 E. 9th, Denver, Secy.

American College of Allergists, Chicago, March 20-22, 1957. Dr. Ethan Allen Brown, Boston, Pres.; Dr. Giles A. Koelsche, Mayo Clinic, Rochester, Minn., Secy.

American College of Chest Physicians, New York, May 29-June 2, 1957. Dr. Herman J. Moersch, Rochester, Minn., Pres.; Mr. Murray Kornfeld, 112 E. Chestnut, Chicago 11, Executive Secy.

American College of Physicians, Boston, April 8-12, 1957. Dr. Walter L. Palmer, Chicago, Pres.; Mr. E. R. Loveland, 4200 Pine, Philadelphia 4, Secy.

American College of Radiology, Chicago, Feb. 8-9, 1957. Dr. Wilbur Bailey, Los Angeles, Pres.; Mr. W. C. Stronach, 20 N. Wacker Dr., Chicago 6, Executive Secy.

American College of Surgeons, Chicago, Oct. 6-10, 1958. Dr. Daniel C. Elkin, Lancaster, Ky., Pres.; Dr. Michael L. Mason, 40 E. Erie, Chicago 11, Secy.

American Congress of Physical Medicine and Rehabilitation. Dr. A. B. Knudson, Washington, D. C., Pres.; Dr. Frances Baker, 1 Tilton Ave., San Mateo, Calif., Secy.

American Congress on Obstetrics and Gynecology. Dr. R. Gordon Douglas, 116 S. Michigan Ave., Chicago 3, Chm.

American Dermatological Association, Belleair, Fla., April 13-17, 1957. Dr. Carroll S. Wright, Philadelphia, Pres.; Dr. J. Lamar Callaway, Duke Hospital, Durham, N. C., Secy.

American Gastro-Enterological Association, Colorado Springs, May 17-18, 1957. Dr. Sam A. Wilkinson, Jr., Boston, Pres.; Dr. H. Marvin Pollard, University Hospital, Ann Arbor, Mich., Secy.

American Gynecological Society, Hot Springs, Va., May 27-29, 1957. Dr. Norman F. Miller, Ann Arbor, Mich., Pres.; Dr. A. A. Marchetti, 3800 Reservoir Rd., N.W., Washington 7, D. C., Secy.

American Heart Association. Dr. Irvine H. Page, Cleveland, Pres.; Mr. Irving B. Hexter, 44 E. 23rd, New York 10, Secy.

American Hospital Association, Atlantic City, Sept. 30-Oct. 3, 1957. Dr. Albert W. Snoke, New Haven, Conn., Pres.; Dr. Edwin L. Crosby, 18 E. Division, Chicago, Executive Director.

American Laryngological, Rhinological, and Otological Society, San Francisco, Calif., 1958. No 1957 meeting. Dr. Percy E. Ireland, Toronto, Ont., Canada, Pres.; Dr. C. S. Nash, 277 Alexander, Rochester 7, N. Y., Secy.

American Neurological Association, Atlantic City, June 17-19, 1957. Dr. H. Houston Merritt, New York 32, Pres.; Dr. Charles Rupp, 133 S. 36th, Philadelphia 4, Secy.

American Ophthalmological Society, Hot Springs, Va., May 30-June 1, 1957. Dr. Frederick C. Cordes, San Francisco, Pres.; Dr. M. C. Wheeler, 30 W. 59th, New York 19, Secy.

American Orthopedic Association, Hot Springs, Va., June 24-27. Dr. David M. Bosworth, New York, Pres.; Dr. Harold A. Safield, 715 Lake St., Oak Park, Ill.

American Pediatric Society, Carmel, Calif., June 17-19, 1957. Dr. Daniel C. Darrow, Mission, Kan., Pres.; Dr. A. C. McGuinness, 1427 I St., N.W., Washington 5, D. C., Secy.

American Proctologic Society, New Orleans, April 24-27. Dr. Rufus C. Alley, Lexington, Ky., Pres.; Dr. Karl Zimmerman, 3500 Fifth Ave., Pittsburgh 13, Secy.

American Psychiatric Association, Chicago, May 13-17, 1957. Dr. Francis J. Braceland, Hartford 2, Conn., Pres.; Dr. William Malamud, 80 E. Concord, Boston 18, Secy.

American Society of Anesthesiologists, Los Angeles, Oct. 14-18, 1957. Dr. Irving M. Pallin, Brooklyn, Pres.; Dr. J. E. Remlinger, Jr., 188 W. Randolph, Chicago 1, Secy.

American Society of Clinical Pathologists, Sept. 29-Oct. 4, 1957. Dr. J. L. Goforth, Dallas, Pres.; Dr. Clyde G. Culbertson, 1040-1232 W. Michigan, Indianapolis 7, Secy.

American Surgical Association, Chicago, May 8-10, 1957. Dr. Loyal Davis, Chicago, Pres.; Dr. R. Kennedy Gilchrist, 59 East Madison, Chicago 3, Secy.

American Urological Association, Pittsburgh, May 6-9, 1957. Dr. George C. Prather, Brookline, Mass., Pres.; Dr. Samuel L. Raines, 188 S. Bellevue Blvd., Memphis, Tenn., Secy.

Association of American Physicians and Surgeons, Delegates and Assembly, Miami Beach, Fla., April 25-27, 1957. Dr. Charles W. Pavey, Columbus, Ohio, Pres.; Mr. Harry E. Northam, 185 N. Wabash Ave., Chicago 1, Executive Secy.

International College of Surgeons, U. S. Chapter, Chicago, Sept. 9-12, 1957. Dr. Curtice Rosser, Dallas, Pres.; Dr. Karl Meyer, 1516 Lake Shore Dr., Chicago, Secy.

National Tuberculosis Association, Kansas City, May 5-10, 1957. Dr. Howard W. Bosworth, Los Angeles, Pres.; Mrs. Morrell DeReign, 1790 Broadway, New York 19, Secy.

Southern Psychiatric Association, Nassau, Oct. 6-8, 1957. William H. McCullagh, Jacksonville, Fla., Pres.; Dr. Joseph L. Knapp, 210 N. Westmoreland, Dallas, Secy.

Southwest Allergy Forum, Fort Worth, May 5-7, 1957. Dr. Truman C. Terrell, Fort Worth, Pres.; Dr. Sim Hulsey, 701 Fifth Ave., Fort Worth, Secy.

Southwest Regional Cancer Conference. Dr. John J. Andujar, 1404 Pennsylvania, Fort Worth 4, Chm.

Southwestern Medical Association, Albuquerque, N. Mex., 1956. Dr. John A Dettweiler, Albuquerque, N. Mex., Pres.; Dr. Russell L. Deter, 1501 Arizona St., El Paso, Secy.

Southwestern Society of Nuclear Medicine, Houston, April, 1957. Dr. Henry H. Turner, Oklahoma City, Pres.; Dr. J. R. Maxfield, Jr., 311 Medical Arts Bldg., Dallas, Secy.

Southwestern Surgical Congress, Wichita, Kan., April 15-17, 1957. Dr. John V. Goode, Dallas, Pres.; Dr. C. M. O'Leary, 207 Plaza Court Bldg., Oklahoma City, Secy.

Tri-State Medical Assembly, Shreveport, September, 1957. Dr. H. O. Padgett, Marshall, Pres.; Dr. Jason Sanders, Sanders Clinic, Kings Highway, Shreveport, La., Secy.

State

Texas Academy of General Practice, Dallas, Sept. 22-25, 1957. Dr. George V. Launey, Jr., Dallas, Pres.; Mr. Donald C. Jackson, 308 W. 15th, Austin, Executive Secy.

Texas Air-Medics Association, Dallas, April, 1957. Dr. W. A. Ostendorf, Fort Worth, Pres.; Dr. C. F. Miller, P. O. Box 1338, Waco, Secy.

Texas Association of Obstetricians and Gynecologists, San Antonio, Feb. 23, 1957. Dr. Carey Hiett, Fort Worth, Pres.; Dr. Oran V. Prejean, 4317 Oak Lawn, Dallas, Secy.

Texas Chapter, American College of Chest Physicians, Dallas, April, 1957. Dr. Walter C. Brown, Corpus Christi, Pres.; Dr. L. M. Shefts, 510 Moore Bldg., San Antonio, Secy.

Texas Club of Internists. Dr. Hatch Cummings, Houston, Pres.; Dr. L. C. Carter, 2600 Procter, Port Arthur, Secy.

Texas Dermatological Society, Dallas, April, 1957. Dr. Thomas L. Shields, Fort Worth, Pres.; Dr. E. N. Walsh, 1310 Medical Arts Bldg., Fort Worth, Secy.

Texas Diabetes Association, Dallas, April, 1957. Dr. Edwin L. Rippy, Pres.; Dr. Richard E. Nitschke, 1702 Nix Professional Building, San Antonio, Secy.

Texas Geriatrics Society, Dallas, April, 1957. Dr. J. O. S. Holt, Jr., 3707 Gaston Ave., Dallas, Secy.

Texas Heart Association, Dallas, April, 1957. Dr. Kleberg Eckhardt, Corpus Christi, Pres.; Mr. Edgar M. Brown, 404 Jesse H. Jones Library Bldg., Texas Medical Center, Houston 25, Executive Director.

Texas Hospital Association, Houston, May 14-16, 1957. Mr. H. M. Cardwell, Lufkin, Pres.; Mr. O. Ray Hurst, Executive Director, 2208 Main, Dallas, Secy.

Texas Industrial Medical Association, Dallas, April, 1957. Dr. V. C. Baird, Houston, Pres.; Dr. Robert A. Wise, Box 2180, Houston, Secy.

Texas Ophthalmological Association, Dallas, April, 1957. Dr. Thomas J. Vanzant, Houston, Pres.; Dr. Louis Daily, Medical Arts Bldg., Dallas, Secy.

Texas Orthopedic Association, Dallas, April, 1957. Dr. John J. Hinchey, San Antonio, Pres.; Dr. Margaret Watkins, 3629 Fairmount, Dallas, Secy.

Texas Pediatric Society, Austin, Oct., 1957. Dr. E. M. Wier, Fort Worth, Pres.; Dr. James N. Walker, 5216 W. Freeway, Fort Worth, Secy.

Texas Proctologic Society, Houston, February, 1957. Dr. Harry B. Burr, Houston, Pres.; Dr. C. P. Hardwicke, 920 E. 32nd, Austin, Secy.

Texas Public Health Association, Houston, Feb. 17-20, 1957. W. T. Ballard, Tyler, Pres.; Mr. H. E. Drumwright, City Health Department, Dallas. Executive Secy.

Texas Radiological Society, Corpus Christi, Jan. 18-19, 1957. Dr. J. R. Riley, Corpus Christi, Pres.; Dr. J. E. Miller, 6407 Forest Lane, Dallas, Secy.

Texas Society for Mental Health, Dallas, March 7-9, 1957. Dr. Carmen Miller, Dallas, Pres.; Mr. John Lane, 2510 San Antonio, Austin, Executive Director.

Texas Society of Anesthesiologists, Dallas, April, 1957. Dr. Charles R. Allen, Galveston, Pres.; Dr. Randle J. Brady, 3317 Binz, Houston, Secy.

Texas Society of Gastroenterologists and Proctologists, Dallas, April, 1957. Dr. John McGivney, Galveston, Pres.; Dr. O. P. Griffin, 1101 Medical Arts Bldg., Fort Worth, Secy.
Texas Society of Pathologists. Dr. Sidney W. Bohls, Austin, Pres.; Dr. M. H. Grossman, St Paul Hospital, Dallas, Secy.
Texas Society of Plastic Surgeons, April, 1957. Dr. Thomas D. Cronin, Houston, Pres.; Dr. Steve R. Lewis, University of Texas Medical Branch, Galveston, Secy.
Texas Surgical Society, Dallas, April 1-2, 1957. Dr. Truman G. Blocker, Galveston, Pres.; Dr. G. V. Brindley, Jr., Scott and White Clinic, Temple, Secy.
Texas Traumatic Surgical Society, Dallas, April, 1957. Dr. J. H. Dorman, Dallas, Pres.; Dr. W. D. Marrs, 306 Broadway, Fort Worth, Secy.
Texas Tuberculosis Association, Longview, April, 1957. Dr. Howard T. Barkley, Houston, Pres.; Mrs. J. V. Cooper, Waxahachie, Secy.
Texas Urological Society, Dallas, Feb. 3, 1957. Dr. Rex Carter, Austin, Pres.; Dr. J. D. Mitchell, Jr., 3707 Gaston Ave., Dallas, Secy.
United States-Mexico Border Public Health Association, San Antonio, April 9-12, 1957. Dr. Guillermo Soberanes, Hermosillo, Sonora, Mexico, Pres.; Dr. Sidney B. Clark, 243 U. S. Court House, El Paso, Secy.

District

First District Society, Pecos, 1957. Dr. E. W. Schmidt, Pecos, Pres.; Dr. John Dunn, Pecos, Secy.
Second District Society. Dr. T. W. Novak, Odessa, Pres.; Dr. Willis T. Carson, 506 North Allegheny, Odessa, Secy.
Third District Society, Lubbock, March 30, 1957. Dr. A. G. Barsh, Lubbock, Pres.; Dr. William Klingensmith, 708 Monroe St., Amarillo, Secy.
Fourth District Society. Dr. Joe B. Stephens, Bangs, Pres.; Dr. S. H. Martin, 115 S. Park, San Angelo, Secy.
Fifth and Sixth Districts Society. Dr. E. Jackson Giles, Corpus Christi, Pres.; Dr. Maurice Nast, 1126 3rd, Corpus Christi, Secy.
Seventh District Society, Austin, March, 1957. Dr. Leslie C. Colwell, Austin, Pres.; Dr. Robert N. Snider, 2410 Rio Grande, Austin, Secy.
Eighth District Society. Dr. E. Peter Garber, Galveston, Pres.; Dr. John Childers, Univ. of Texas Medical Branch, Galveston, Secy.
Ninth District Society, Navasota, April 3, 1957. Dr. C. Marius Hansen, Navasota, Pres.; Dr. Lyman C. Blair, 1212 Rothwell, Houston, 2, Secy.
Tenth District Society. Dr. Taylor Walker, Beaumont, Pres.; Dr. Alan E. Hubner, 590 Center, Beaumont, Secy.
Eleventh District Society. Dr. Royal Kay, Palestine, Pres.; Dr. Hugh F. Rives, Jacksonville, Secy.
Twelfth District Society. Dr. R. Henry Harrison, Bryan, Pres.; Dr. W. M. Avent, 1716 Colcord, Waco, Secy.
Thirteenth District Society. Dr. R. L. Nelson, Wichita Falls, Pres.; Dr. R. D. Moreton, 1217 W. Cannon, Fort Worth, Secy.
Fifteenth District Society, Mount Pleasant, April, 1957. Dr. L. E. Rutledge, Daingerfield, Pres.; Dr. O. R. Taylor, Jr., Linden, Secy.

Clinics

Dallas Southern Clinical Society, March 18-20, 1957. Dr. Howard C. Coggeshall, Dallas, Pres.; Miss Helga Boyd, Medical Arts Bldg., Dallas 1, Executive Secy.
International Medical Assembly of Southwest Texas, San Antonio, Jan. 28-30, 1957. Dr. John C. Parsons, 1125 Nix Professional Bldg., San Antonio, Secy.
New Orleans Graduate Medical Assembly, March 11-14, 1957. Dr. Eugene H. Countiss, New Orleans, Pres.; Dr. Maurice E. St. Martin, 626 Maison Blanche Bldg., New Orleans 16, Secy.
North Texas-Southern Oklahoma Fall Clinical Conference, Wichita Falls. Dr. J. L. Jackson, III, Wichita Falls, Chm.
Oklahoma City Clinical Society Conference. Miss Alma F. O'Donnell, 512 Medical Arts Bldg., Oklahoma City 2, Executive Secy.
Postgraduate Medical Assembly of South Texas, Houston, July, 1957. Dr. C. Forrest Jorns, 5644 Lawndale, Houston, Secy.
State Tumor Conference, Wichita Falls, April 3, 1957. Dr. Bailey R. Collins, 925½ Scott, Wichita Falls, Director; Mrs. Chester Robinson, Wichita County Medical Society Tumor Clinic, Wichita Falls, Secy.

Board Examinations

Texas State Board of Examiners in Basic Sciences, next examination, April and October, 1957. Henry B. Hardt, Ph.D., Fort Worth, Pres.; Mrs. Pearl A. Barrera, 407 Perry-Brooks Bldg., Austin, Chief Clerk.

Therapeutic and Eugenic Sterilization Precautions

Probably the most controversial and widely discussed topics in the field of medical jurisprudence in the past number of years are those dealing with sterilization and artificial insemination. Beginning with this article, some of the more important aspects of these subjects will be discussed.

The question of sexual sterilization is one upon which churches have voiced their opinions strenuously, but apart from the religious or moral side of it, there is a great deal in the law which applies when physicians attempt to do these sterilization operations.

Undoubtedly, the most frequently asked question in regard to sterilization operations is, "What is the law as pertains to sterilization in Texas?" As there is no statute dealing with this subject in Texas, it is impossible to quote a portion of some law which could give a ready answer to this question. As a result, one is forced to look to the cases which have been decided by the courts. Here, again, one is met with the difficulty that there is no absolutely decided case in Texas which has dealt with this subject, and for that matter, there have been but few cases decided in the remaining states.

Although there is, at best, little authority as to what reasoning the courts of Texas might apply if the issue were litigated, there are sufficient statutory enactments to indicate that it would be unwise to venture into this area without a thorough understanding of the problems and the dangers involved.

This problem dealing with sterilization probably can be discussed best by breaking it down into three parts—therapeutic sterilization, eugenic sterilization, and nontherapeutic sterilization.

In therapeutic sterilization, there is not the problem that is presented in eugenic or nontherapeutic sterilization. This is due mainly to the fact that it never has been seriously disputed that sterilization necessitated by medical need would not bring about civil or criminal liability. Of course, it should be pointed out that even in situations of this type, the physician should explain fully to both spouses the probable outcome of the operation and should obtain the consent of *both* spouses when the result of the operation will, or probably will, result in sterilization. The question arises at this point of whether it is absolutely necessary to have the consent of both spouses for an operation which will result in sterilization. Theoretically, the answer could be no, because within certain limitations a person has the inherent right to decide what is to be done to his or her own body. However, there is a suggestion that the other party, having been deprived of his right to have children if he or she so desires, has lost that right through no act of his own but through an act of his spouse. The result of such reasoning easily might be a charge of malpractice against the physician who performed the operation.

In regard to eugenic sterilization (sterilization of the feebleminded or other mentally afflicted), Texas is one of the 18 or 19 states having no legislation or statutes on the subject. Such being the case, sterilization for this purpose cannot be done in Texas without probable violation of the law by the physician or surgeon, and possibly, if not probably, exposure to civil liability. Of course, in the states having eugenic sterilization laws which are properly and carefully drawn, there seems to be no constitutional question, as the United States Supreme Court case of Buck v. Bell* would indicate. It should be mentioned, though, that in states having statutes of this sort, the statute must be fol-

*130 S.E. 516, 274 U.S. 200.

lowed to the letter to avoid possible criminal or civil liability upon the part of either the physician or the person requesting such operation.

The last and most controversial of the various kinds of sterilization deals with nontherapeutic or voluntary sterilization. Because this undoubtedly is the area in which the most danger and disagreement lies, I believe it would be better if this topic were discussed in more detail in the next issue of the *Journal.*

It can be said in regard to therapeutic sterilization that in certain instances there is a necessity for operations which will or probably will result in sterilization, such as when the reproductive organs are diseased to the extent that an operation is necessary for the welfare of the patient, and also when the woman's life would be endangered if she gave birth to any more children. Of course, in cases of therapeutic sterilization, the results also should be explained thoroughly to both spouses, and consent should be given by both spouses for this procedure. It might be mentioned at this point that this is an area where consultation, if possible, would give a little further protection.

Eugenic sterilization should not be performed in Texas because of the tremendous risk of either criminal or civil liability, if not both.

(In the next issue of the *Journal,* the various aspects of nontherapeutic or voluntary sterilization will be discussed, and it is recommended that these two articles be studied together.)

—PHILIP R. OVERTON, LL.B., Austin.

Revisions Proposed For Mental Health Laws

The University of Texas Law School is drafting a proposed revision of laws stating the program of the Board for Texas State Hospitals and Special Schools, in particular the laws relating to mental health.

Changes to be proposed will encourage earlier medical and psychiatric care for mental cases, which in turn will result in more persons being restored to mental health at less inconvenience to themselves and their families and at less expense to the state.

The proposed mental health code also will contain a revision of the laws governing the Board for Texas State Hospitals and Special Schools, bringing them up to date with present day administrative and managerial procedures and problems in operating a modern state hospital system.

A major advance in the field of mental illness was the passage of constitutional amendment 7, which permits hospitalization of mental patients for a period of more than 90 days without jury trial. Trial by jury still is available if desired. There also is a need for codification of the statutory statement of the Board for Texas State Hospitals and Special Schools program.

In the present law there are many gaps, conflicts, and inconsistencies.

The project is being financed by the Hogg Foundation for Mental Hygiene.

Personal Injury Institute Planned

An Institute on Personal Injury Litigation will be conducted at the Southwestern Legal Center, Dallas, December 5-7. The program will feature practical discussions of interest to general practitioners.

Topics will include preparation for trials, including both preparation and presentation of the plaintiff's and defendant's case; functions and limitations of an autopsy; negotiation and settlement of claims; time needed to determine disability; psychological trauma; placing a dollar value on claims; evaluation and settlement techniques; uses and limitations of the x-ray; plaintiff's proof and argument of pain; and defendant's evidence and argument on the issue of pain.

Physicians taking part in the program will be Drs. Ozro T. Woods, Charles T. Ashworth, George W. Thoma, P. O'B. Montgomery, Morton Mason, Charles Gregory, J. E. Miller, Charles M. Wilson, D. J. Henry, and LeRoy J. Kleinsasser, all of Dallas; J. J. Andujar, Fort Worth; and Spencer Bayles, Houston.

Registration fee is $35 for all sessions or $15 for single day registrations. Inquiries may be sent to Gordon R. Carpenter, Southwestern Legal Foundation, Hillcrest at Daniels, Dallas 5.

CANCER TEACHING DAY

A medical and scientific session will be held by the Oklahoma Division of the American Cancer Society December 8 in Oklahoma City. From 8 to 10 a. m., there will be a clinical pathological conference moderated by Dr. Henry G. Bennett, Director, University Hospital Tumor Clinic, Oklahoma City. The remainder of the scientific program will be as follows:

Diagnostic Significance of a Lump in the Neck—Dr. Hayes Martin, New York.
Cancer in Bone—Dr. Roger A. Harvey, Chicago.
Relation of Postmenopausal Adenomatous Hyperplasia to Endometrial Cancer—Dr. Richard W. TeLinde, Baltimore.
The Cystic Ovary—Dr. John R. Schenken, Omaha.
Highlights of Supravoltage Therapy—Dr. Harvey.
Relationship Between Cystic Disease of the Breast and Breast Cancer —Dr. Schenken.
Cancer of the Mouth—Dr. Martin.
Cervical Cancer: Early Diagnosis and Treatment—Dr. TeLinde.

Medical Research Foundation Launched

A dinner October 5 in Austin marked the first major step of the Medical Research Foundation of Texas toward making itself known. Organized in August, 1955, after several years of preliminary thinking and planning by those aware of the serious shortage of research funds available for medicine and dentistry in Texas, the foundation now has a 55 member board of directors and a grants committee chairman, and is ready to raise and disburse funds which it hopes will total $5,000,000 in the next three years and $1,000,000 each year thereafter.

Former Governor Dan Moody, chairman of the board of the foundation, presided at the dinner for which Dillon Anderson, Houston attorney, author, and former White House aide, was the chief speaker. Dr. F. J. L. Blasingame, Wharton, was introduced as the newly elected president of the foundation. Dr. Carl A. Nau, professor of preventive medicine and public health at the University of Texas Medical Branch, Galveston, and chairman of the foundation's research committee, explained the goals of the foundation.

It is anticipated that the Medical Research Foundation of Texas will not go into the business of research itself, but will serve as an informal coordinating agent for medical and dental research in already established centers within the state, evaluating their programs and needs and making these needs known to individuals and foundations with money to contribute. It is expected that once funds within this area begin to flow into local research, major support from national sources will be attracted. Corporate interests, benevolent foundations, and individuals are expected to change the

present picture of more than 40 per cent of research grants to Texas institutions coming from federal sources—primarily the United States Public Health Service and the armed forces.

As examples of the needs now evident if Texas is to keep abreast of modern research facilities, the foundation points to 10 more electronic recording devices ($180,000), 10 more ultra centrifuges ($150,000), 100 more pressure transducers ($35,000), 15 more time-lapse photography units ($97,500), 10 more electron microscopes ($300,000), 3 more air compression chambers ($120,000), 5 more six-bed metabolic balance units ($750,000). In addition, salaries for research personnel and adequate space in which to carry on activities are important in the thinking of foundation directors.

The foundation officials also consider it wise to foster and support meetings and conferences of groups of individuals within various fields of scientific endeavor relating to medical research in Texas. In so doing, a system of collaborative research throughout the entire state can be developed, and once this is done effectively, it is expected that funds will be forthcoming for the support of all types of research so planned from numerous sources other than the foundation.

The foundation does not intend to go beyond the point of fostering research, its leaders assert, but it intends to operate through the encouragement of self-improvement of each institution and thereby to encourage integration and development of the basic research facility and climate of Texas.

Offices for the foundation have been opened in Galveston with Dr. H. W. Paley as executive vice-president. He can be addressed at University Station, Galveston. A paid research director is provided for in the organization of the foundation, and it is anticipated that the position will be filled by a person with a rich background in medical research sometime around the middle of 1957.

Specific plans for attracting contributions already are in effect. Within a short time appropriate institutions within the state will receive details concerning the type of effort the foundation is in a position to foster. Each such institution will be invited to make application for assistance in accordance with foundation policy, which will be set by the research director and the research grants committee. The first grants made by the foundation will probably be announced during the late summer of 1957.

Gifts to the Medical Research Foundation of Texas are tax deductible.

Medical Care of AWOL Army Military Personnel

Recent changes in Army regulations provide, under certain conditions, for payment from Army funds of bills incurred for emergency treatment by soldiers who are AWOL at the time treatment is given. The new ruling is as follows:

Upon acceptance by a hospital or physician of a member of the Army, immediate report should be made to the Army commander of the Area in which the civilian medical care is required, the chief of the military district of the Area, the nearest Army post commander, or the patient's commanding officer. The report should include the patient's name, serial number, organization, military address, status, nature of illness or injury, and a statement of the practicability of transferring the patient to an Army or other governmental hospital. This procedure should be followed whether the patient is absent with or without official leave in order that his organization may be informed of his continued absence because of illness or injury. A similar report should be made if for any reason an unconscious person is believed to be a member of the Army. On receipt of an acknowledgment from military authorities authorizing the civilian hospital or doctor to treat the case, the charges for medical care furnished AWOL personnel subsequent to receipt of the authorization may be paid. These statements apply to practically every situation except when unauthorized medical care is furnished for a condition that is not an emergency.

Statements of account for payment may be sent to the patient's commanding officer or to The Surgeon, Fourth Army, Fort Sam Houston, who will forward them to the proper destination.

Texas Not Affected By Federal Aid Program

A new medical care program for persons receiving public assistance, authorized by Congress during its last session and due to go into effect July 1, 1957, will have no immediate effect in Texas. The program will permit medical costs for persons receiving old age, child aid, blind, or disabled benefits to be added to the maximums for regular assistance, these additional funds to be paid to the vendors of medical service or their agents. This new program, like the public assistance program now in effect, depends upon matching of funds by the states. Inasmuch as Texas is already spending as much in its assistance program as limits set by the Texas Constitution will permit, officials of the State Department of Public Welfare anticipate no change in current payments or procedures until and unless a constitutional amendment is adopted and additional matching funds are authorized by the Legislature.

Texas Surgical Society

Approximately 222 members and guests of the Texas Surgical Society met in San Antonio in October and heard their guest speaker, Dr. Randolph Lovelace, Albuquerque, N. Mex., talk on "Use of Iodine^{131} in the Diagnosis of Thyroid Disease and in Evaluation of Patients Before, During, and After Thyroid Surgery," and "Experience in Plication of the Small Intestine in the Treatment of Repeated Intestinal Obstruction."

Other scientific topics, which were discussed by Texas physicians, were "Diagnosis and Management of Hyperparathyroidism," "Urologists' Role in Hyperparathyroidism," "Ovarian Tumors," "Metastatic Malignancy as Evidenced by a Spinal Cord Lesion," "Early Bronchogenic Carcinoma," "Chemopallidectomy for Parkinsonism," "Homografting of Peripheral Arteries in Arteriosclerosis," "Cystic Disorder of the Kidney," "Lesions of the Breast as Met in Private Practice," "Esophageal Complications of Lymphatic Origins," "Jejunal Ulcer Complicating Gastric Surgery," "Segmental Ulcerative Colitis," "Diverticulosis of the Colon: Surgical Treatment of Complications," "Further Experiences with Lyophilized Dura Mater in the Repair of Inguinal Hernias," and "Painful Shoulder."

New officers are Dr. Truman G. Blocker, Galveston, president; Dr. Edward Coyle, San Antonio, first vice-president; Dr. Andrew Small, Dallas, second vice-president; Dr. G. V. Brindley, Jr., Temple, secretary; Dr. Robert Sewell, Fort Worth, treasurer; and Dr. Asher R. McComb, San Antonio, member of the Council.

The next meeting will be April 1-2 in Dallas.

Postgraduate Courses

General Medicine, Austin, Nov. 19, 26, and Dec. 10, 17.—The anemias, steroid therapy, treatment of diabetes, and liver disease will be discussed in this course by Drs. William C. Levin, Galveston; James A. Greene, Houston; Raymond L. Gregory, Galveston; and John R. Kelsey, Houston. The course will be two hours each Monday evening, and the registration fee of $15 may be paid to the University of Texas Postgraduate School of Medicine, Texas Medical Center, Houston 25.

Infertility, New York, December 3-5.—This course will deal with the problem of sterility as related to both husband and wife. The Dean, New York University Post-Graduate Medical School, 550 First Avenue, New York 16, can give full details.

Pediatric Cardiology, New York, December 3-7.—Pediatricians, general practitioners, and others who work with cardiac conditions in children may find this course helpful. Information may be obtained by writing the Dean, New York University Post-Graduate Medical School, 550 First Avenue, New York 16.

Diagnosis and Treatment of Trauma, New York, December 3-8.—Industrial and civilian injuries of all types will be considered in this course, which will be held at New York Post-Graduate Medical School, 550 First Avenue, New York 16.

Safety in the Operating Room, New York, December 14-15.—Designed for physicians, nurses, and other hospital personnel, this course will deal with the organization and physical means of controlling the various hazards in the operating room. It will be repeated March 1 and 2. For information, write the Dean, New York Post-Graduate Medical School, 550 First Avenue, New York 16.

CHRISTMAS SEAL CAMPAIGN

On November 15, the Texas Tuberculosis Association launched its annual Christmas Seal Campaign to support the control of tuberculosis.

In Texas, it is estimated that 7,000 of the 20,000 people who have active tuberculosis do not even know that they are sick, and continue to infect others. Many patients leave tuberculosis hospitals before their cases are arrested, and return to their homes and jobs and continue to spread the disease.

Help Fight TB

Buy Christmas Seals

The state maintains five tuberculosis hospitals, which care for about 3,400 patients. In addition, 23 other Texas institutions are operated for the exclusive care of tuberculosis patients by private, church, and non-profit organizations and city, city-county, and the federal government. Bed capacity in these institutions is 2,166.

Although deaths in the United States from tuberculosis have declined 53 per cent in the past five years, there were more new cases found in Texas last year than ever before.

Texas Neuropsychiatric Association

Members of the Texas Neuropsychiatric Association will meet November 30 and December 1 in Dallas in conjunction with the Mexican Society of Neurology and Psychiatry.

The scientific program will be as follows:

NOVEMBER 30

Reexamination of Mental Illness in Old Age—Dr. Warren S. Williams and E. Gartley Jaco, Ph.D., Galveston.
Drug Addictions—Dr. William F. Ossenfort, Dallas.
Out-Patient Treatment of Epilepsy—Dr. L. M. Pence, Dallas.
Surgical Treatment of Epilepsy—Dr. Grant L. Boland, Dallas.
Recent Advances in Therapy of Neurological Disorders—Dr. Walter O. Klingman, Charlottesville, Va.
Myasthenia Gravis with Onset Following Thymectomy—Dr. Israel H. Schuleman, Houston.
Meningitis Secondary to Pituitary Adenoma—Dr. Jack I. Woolf, Dallas.
Syringomyelia: Successful Surgical Treatment—Dr. A. Hauser, Houston.
Nystagmus in Response to High Intensity Stimulation—Harlow W. Ades, Ph. D., Dallas.
Achievement and Outlook in Psychopharmacology—Dr. Andres Goth, Dallas.
Experimental Psychoses—Dr. Vernon Kinross-Wright, Houston.
The Use of Hypnosis as a Method of Anesthesia—Harold B. Crasilneck, Ph. D., Dallas.

DECEMBER 1.

Some Intimations on Community Child Guidance Clinics—Dr. C. Christopher Morris, II, Galveston.
Experiences with Group Meetings on a Psychiatric Ward of a General Hospital—Dr. W. Sterling Bell, Dallas.
Problems of a Therapist in Psychotherapy of a Paranoid Character—Dr. Eugene C. McDanald, Galveston.
Psychotherapy of Marriage Problems—Dr. Marion B. Richmond, Dallas.
Artane as an Adjunct in Chlorpromazine Therapy—Dr. Walter E. Reifslager, Jr., Galveston.

There will be a cocktail party and banquet for doctors and their wives on the evening of November 30, and a full program of entertainment has been planned for the ladies. Busses will be available to take registrants to the Southern Methodist University-Texas Christian University football game Saturday afternoon.

Registration fee will be $10 for doctors and $7 for their wives. The meeting will be open to all physicians.

Personals

Drs. Russell J. Blattner and Michael E. DeBakey, both of Houston, were on the program of the Tennessee Valley Medical Assembly early in October. Dr. Blattner spoke on encephalitis, and Dr. DeBakey spoke on surgical treatment of diseases of the aorta.

Dr. John L. Goforth, Dallas, is the new president of the American Society of Clinical Pathologists.

Dr. B. M. Hyman, Beaumont, recently has been certified by the American Board of Otolaryngology.

Dr. Milford O. Rouse, Dallas, President of the Texas Medical Association, has been chosen an advisory member of the American Medical Education Foundation. The newly created advisory memberships are bestowed on persons prominent in medical affairs who have shown an active interest in the foundation.

Dr. Charles J. Wilson, Galveston, has been appointed senior assistant surgeon in the United States Public Health

Service Commissioned Reserve. The appointment of 117 officers throughout the country was announced in October.

Boys were born to *Dr. and Mrs. Cecil R. Glass,* Beaumont, in August, and to *Drs. Chester G. and Jaimie N. Cochran* in Houston July 27. New parents of a baby girl are *Dr. and Mrs. George D. Broyles,* Houston, June 26.

Texas Rheumatism Association

The Texas Rheumatism Association will meet December 7 in Dallas, and any Texas physician may attend after payment of the $5 registration fee. The program will be as follows:

Roentgenological Examination of the Back with Presentation of Unusual Lesions—Dr. John J. Sazama, Dallas.
Physiotherapy for Low Back Problems—Dr. Edward M. Krusen, Jr., Dallas.
Rheumatoid Arthritis; Diagnosis and Treatment—Dr. Maxwell Lockie, Buffalo, N. Y.
Effect of Steroids in the Acid Bone Balance—Dr. Donald W. Seldin, Dallas.
Effects of Therapy with Large Doses of Steroids—Dr. Joseph M. Hill, Dallas.
Present Status of Operative Procedures in Painful Hips—Dr. Dorsey K. Barnes, Dallas.
Recent Advances in Diagnosis and Treatment of Gout—Dr. Lockie.
Painful Shoulder Syndromes; Diagnosis and Treatment—Dr. Charles P. Gregory, Dallas.
Neck Syndromes from the Viewpoint of the Neurosurgeon—Dr. Albert P. D'Errico, Dallas.

A luncheon will be held at noon, and at 6 p. m. there will be a cocktail party for the doctors attending the sessions.

Science Fellowships Available

The National Science Foundation is offering three fellowship programs for advanced study and research in the natural sciences. It is estimated that approximately 1,000 awards will be made in the foundation fellowship programs in March, 1957. A predoctoral program will be available for college seniors and graduate science students; a postdoctoral program is designed for scientists who already have held the science doctorate for a minimum of five years and have demonstrated unusual ability for productive scholarship. Fields included will be mathematics, physics, medicine, biology, engineering, and certain other natural and social sciences.

Complete details are available from the National Science Foundation, Washington 25, D. C.

TEXAS PEDIATRIC SOCIETY

The Texas Pediatric Society met in Dallas October 19 and 20, and guest speakers included Dr. Alexis F. Hartmann, St. Louis, Mo.; Dr. Alfred M. Bongiovanni, Philadelphia, Pa.; Dr. A. J. Rhodes, Toronto, Canada; Dr. Arild E. Hansen, Galveston; Dr. Murdina M. Desmond, Houston; and Dr. Edward L. Pratt, Dallas. Approximately 275 persons attended the meeting, and a luncheon, banquet, and cocktail party provided entertainment. Special events were held for the ladies.

New officers of the Society are Dr. E. M. Wier, Fort Worth, president; Dr. T. J. McElhenney, Austin, president-elect; Dr. James N. Walker, Fort Worth, secretary; Dr. D. H. McDonald, Abilene, treasurer; and Dr. Halcuit Moore, Dallas, councilor for District 2.

SCHERING AWARD CONTEST OPENS

Three increasingly important branches of medicine—cardiology, mental disease, and the treatment of eye disorders—have been selected as topics for the 1957 Schering Award Contest, which is open annually to all medical students in the United States and Canada.

A new development this year is that a total of $4,500, double the amount offered previously, will be awarded in prizes. Literature and entry forms are being distributed to medical schools, and entry forms must be submitted before January 1, 1957.

Last year a Texas student, Wayne M. Meyers, Houston, was a winner. His paper was "Prevention and Treatment of Hemolytic and Allergic Blood Transfusions Reactions."

Voters Pass New Commitment Act

By a vote of five to one in the November general election, Texans passed the constitutional amendment which allows mentally ill persons to be hospitalized more than 90 days without trial by jury. Such trials still are available for persons desiring them.

FELLOWSHIPS IN DERMATOLOGY

Several dermatologic research and teaching fellowships have been made available at the New York Skin and Cancer Unit of the New York University-Bellevue Medical Center. They are available on two levels; the first is for dermatologists who have completed their three year training in dermatology and wish to do further special research or teaching, and the second is available to graduate students or residents who have completed their basic science year at a recognized institution and plan to do research or teach in special fields.

Applicants may apply to the director, Service on Dermatology, New York Skin and Cancer Unit, 330 Second Avenue, New York 3.

British Psychiatrist Visits Texas

Dr. John R. Rees, London, England, director of the World Federation of Mental Health, spoke in five Texas cities late in September. His lectures were arranged by local groups of the Texas Society for Mental Health, and his visit was sponsored by the Hogg Foundation for Mental Hygiene. Dr. Rees was a founder of the World Federation of Mental Health and was its first president. He has been its director since 1949. He was instrumental in organizing the Third International Congress on Mental Health held in London in 1948, and his work has taken him to many countries. While in Texas, he visited Dallas, Fort Worth, Waco, Austin, and Houston.

GP's Name New Officers

Dr. George V. Launey, Dallas, was installed as president of the Texas Academy of General Practice at its seventh annual meeting in Houston in September. Dr. G. W. Cleveland, Austin, was chosen president-elect; Dr. C. E. Oswalt, Fort Stockton, vice-president; and Dr. John M. Smith, San Antonio, treasurer.

Preoperative And Postoperative Care

The Texas Medical Association Memorial Library recently has had many requests for information on preoperative and postoperative care. Following is a bibliography of material available on this subject.

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★ Motion Pictures

Inside Story

16 mm., sound, color, 13 minutes.

This film depicts the battle against tuberculosis and illustrates the various types of lung surgery to ease the burden of a damaged lung. It points out progress in treatment with drugs and emphasizes the importance of hospital rest for tuberculous patients. All-round healthful living is suggested as the best preventive of tuberculosis.

CANCER FILMS AVAILABLE

Cancer of the Prostate

16 mm., sound, color, 50 min.

The prevalence of cancer of the prostate is delineated and the newer methods for the detection and early diagnosis of prostatic cancer are defined, including a consideration of the comparative value of prostatic smears and needle, punch, and open biopsies. The use of hormones, the role of radical surgery, and palliation of the terminal patient are discussed in terms of management. The pathogenesis of the disease is traced.

Cancer of the Thyroid

16 mm., sound, color, 29 min.

The subject is introduced by a statement on the incidence of this disease in the young and old, its relation to other thyroid enlargements, and sex ratios, all of which are valuable guides to differential diagnosis. This is followed by

a classification and description of the various types of thyroid cancer. The current status of surgery, radiation, and radioactive iodine therapy is presented in relation to localized, regional, and distant disease.

Chemotherapy: A Research Frontier

16 mm., sound, color, 44 min.

The program content consists of dramatic illustrations of the development of the newer chemotherapeutic agents which ultimately become available to the medical profession. Background work in cancer chemotherapy research is demonstrated and carried step by step through the phases of synthesis, animal trials, screening, tissue culture, and evaluation of effect on tumor growth. The relationship of chemotherapeutic research to the over-all picture of cancer control is clarified.

Diagnosis of Breast Cancer

16 mm., sound, color, 45 min.

The problem of breast cancer is stated in epidemiologic terms, and the frame of reference is brought to the office of the general practitioner. The pathogenesis of breast cancer is described, as well as the routes and methods for tracing metastasis. The importance of early diagnosis is stressed, and the detailed technique of adequate breast examination is explained. The patient's responsibility in the detection of breast cancer, through breast self-examination, is emphasized.

Head and Neck Cancer

16 mm., sound, color, 45 min.

A wide variety of early and late cancers of the mouth, pharynx, larynx, and paranasal sinuses is demonstrated. Methods of complete examination of the head and neck are shown along with proper biopsy techniques. This program provides clinical information based on an unparalleled experience in the field of head and neck cancer. The methods and results of treatment accompany the presentation of cases.

Gifts to the Library

Dr. George E. Clark, Jr., Austin, 122 journals.
Dr. and Mrs. J. L. Jinkins, Galveston, 1 book.
Dr. J. Edward Johnson, Austin, 8 journals; 18 reprints.
Dr. S. N. Key, Jr., Austin, 2 books; 8 journals.
Dr. James E. Kreisle, Austin, 3 books.
Dr. Matthew F. Kreisle, Jr., Austin, 37 books; 25 journals.
Dr. Georgia Legett, Austin, 5 books; 77 journals; 52 reprints.
Dr. David McCullough, Kerrville, 592 journals.
Dr. A. D. Pattillo, Austin, 26 journals.
Dr. John Thomas, Austin, 1 book; 2 journals.
Dr. Bennie O. White, Austin, 19 journals.

★ Books

The Prevention of Disease in Everyday Practice

ISADORE GIVNER, B. S., M. D., F.A.C.S., *and* MAURICE BRUGER, M. Sc., M. D., C. M., F.A.C.P. *964 pages. St. Louis, C. V. Mosby Company, 1955.*

This is an excellent volume to be kept in the library of every busy practitioner of medicine. The book contains 933 pages of reading material with 50 text illustrations. As set forth in the foreword, preventive medicine at the present time is done mostly by the public health practices, but the private practitioners, by being aware of their responsibilities toward preventive medicine, can play leading roles in this field. This book is a collection of monographs by 47 practitioners. Each is a specialist in his own field and all are teachers as well as practitioners. As one would expect in a book of this sort, there is no continuity. Each subject is a clear and distinct entity, and it is treated wholly and completely from the idea of prevention of disease. The surgical aspects of the conditions are dealt with in a manner which calls attention to the prevention of complications of surgery. The role of radiology in the prevention of disease is discussed completely, and the use of x-ray for examination with the idea of preventing disease or complications of disease is gone into thoroughly. The matter of complications and dangers of the use of the newer radioactive materials also is discussed.

Many subjects, such as cancer, in which prevention in a strict sense is a difficult goal to achieve, are discussed completely and thoroughly. A resumé of the early symptoms and methods of early diagnosis so that adequate treatment may be rendered in time is given.

A complete and interesting discussion of the preventive aspects of infectious disease is presented in the book.

While at first reading it is a difficult book to assimilate, it is felt by the reviewer that as a reference book, it will be of untold value to the general practitioner.

—C. E. Oswalt, Jr., M. D., Fort Stockton.

The Lacrimal System: Clinical Application

EVERETT R. VEIRS, M. D., *Chief, Section of Ophthalmology, Scott and White Clinic, Scott and White Memorial Hospitals, and Scott, Sherwood, and Brindley Foundation, Temple, Texas; Professor of Ophthalmology, The University of Texas Postgraduate School of Medicine, Temple Division. 159 pages. $7.50. New York, Grune & Stratton, 1955.*

This monograph presents information concerning the entire lacrimal system. There has been a definite need for publication covering the entire field. A practical approach to disorder of the system is given, and illustrations are used freely. There are many references to the works of others.

Dr. Veirs' excellent work with polyethylene tubing is presented. External dacryocystorhinostomy is discussed thoroughly. The various modifications of this procedure and other procedures aimed at improving lacrimal drainage are included, together with an adequate bibliography.

—Robert M. Rothen, M. D., Austin.

Applied Medical Bibliography

WILLIAM DOSITE POSTELL, *Medical Librarian and Professor of Medical Bibliography, Louisiana State University School of Medicine, New Orleans. 142 pages. $4.50. Springfield, Ill., Charles C Thomas, 1955.*

Knowledge of the organization and arrangement of the medical library, and of the major sources available for searching the literature, is becoming more imperative in the medical profession. The purpose of this book is to provide a basic guide for the student engrossed in acquiring such knowledge in addition to providing information on documentation and the techniques of scientific writing.

Medical literature is so extensive that it is impossible to keep abreast of current developments in all areas of the profession. Mr. Postell has selected some of the most pertinent

journals and reference tools as examples of their function in the library. No attempt has been made to cover foreign language publications. Emphasis is placed on English language publications with which the student should become familiar.

The varied aspects of medical literature are presented in a clear and simple style from the early Greek manuscripts (for historical background) through the development of the book and the modern journal.

Mr. Postell has presented an excellent fundamental handbook to acquaint the medical student with the functions of the medical library.

—Dorothy A. Thompson, Austin.

★ **Texas Medical Association**

Negotiations Proceed on Dependent Care Program

Representatives of the Texas Medical Association were en route to Washington, D. C., to negotiate with the Department of Defense with regard to participation in the Military Dependent Medical Care program (Medicare), scheduled to become effective December 7, when this *Journal* went to press.

The House of Delegates of the Association in special session September 9 voted (1) to take part in the program, (2) to name Blue Shield of Texas to administer it, (3) to appoint the Board of Trustees as the negotiating agent in making a one year contract for the Association, and (4) to designate the Council on Medical Economics to prepare a schedule of fees after consultation with representatives of scientific sections and specialty groups. In taking this action, the House noted its continuing opposition to the idea of nationalized medical care but recognized the fact of a law already passed by Congress.

Dr. R. W. Kimbro, Cleburne, chairman of the Board of Trustees; Dr. Harvey Renger, Hallettsville, chairman of the Council on Medical Economics; C. Lincoln Williston, Austin, Executive Secretary; and Philip R. Overton, Austin, General Counsel, were delegated by the Trustees to act in the Washington negotiations. W. R. McBee, Dallas, representing Blue Shield of Texas, also went with the group. They took with them a fee schedule prepared in accordance with the directive of the House of Delegates. Each member of the Council on Medical Economics, referring to the average fee survey conducted recently by the Texas Medical Association, prepared a tentative maximum fee schedule from the 115-page nomenclature booklets provided by the Department of Defense. Fees thus indicated were reconciled into a single schedule by the chairman, Dr. Renger.

Copies of this schedule were made and appropriate portions sent to the officers of 32 sections, related organizations, and other specialty groups and also to members of the Council on Scientific Work and to other individuals. Personal calls on more than 20 specialty group officers in their respective areas were made by two members of the Council on Medical Economics, Dr. C. Forrest Jorns of Houston and Dr. C. D. Bussey of Dallas. Thirty of the 32 specialty groups responded, as did eight other individuals, and their recommendations with all previous material were used by Dr. Renger in selecting the final fee schedule.

Should the negotiations between the Texas Medical Association and the Department of Defense fail to result in a contract, the Medicare program may be carried on in Texas through arrangements between governmental agencies and individual physicians. Whether through contract with the Association or through individual arrangements, the program need not be participated in by any physician who prefers to disregard it.

Under the new law, the Washington staff of the American Medical Association points out, dependents of (1) members of the uniformed services (including Army, Navy, Air Force, Marine Corps, Coast Guard, Commissioned Corps of the Coast and Geodetic Survey, and Commissioned Corps of the United States Public Health Service), (2) retired members, and (3) persons who died while a member or retired member are entitled to medical care. However, only spouses and dependent children of persons on active duty (if duty orders are for more than 30 days) are eligible for care from civilian sources.

Various types of medical care are available through the program in military facilities. In civilian facilities, care is limited to acute medical conditions, including acute phases of chronic diseases; surgical conditions, contagious diseases while the patient is in the hospital; complete obstetrical and maternity care; 365 days of hospitalization (semiprivate accommodations) for each admission, including all necessary services and supplies by the hospital; prehospitalization and posthospitalization services of the doctor for bodily injury or surgical operation, including certain tests; acute emergencies of any nature if a threat to life, health, or well being, including temporary treatment of acute emotional disorders; and diagnostic tests and procedures during hospitalization.

Payment by the government is also authorized for civilian treatment of certain bodily injuries (fractures, dislocations, lacerations) and a limited number of tests in connection with them when there is no hospitalization. In such cases when the patient is not hospitalized, the maximum government payment is $75 for laboratory tests, pathology, and radiology examinations. Use of hospital outpatient facilities for injuries is authorized.

Medical care not authorized in civilian facilities, the Washington AMA staff reports, includes chronic diseases (except acute exacerbations and complications); nervous and mental disorders; elective medical and surgical treatment; domiciliary care; and treatments or procedures normally considered to be outpatient care.

Although at first spouses and children of active duty members of the uniformed services will have free choice between civilian and military care, limitations may be placed later by the Secretary of Defense or the Secretary of Health, Education, and Welfare if it is shown that use of civilian medical facilities by dependents in a certain area has affected adversely the optimum economic utilization of service facilities.

By no later than July 1, 1957, dependents will be identified by a "Dependents' Authorization for Medical Care" card (DD Form 1173), which will indicate also whether the family is entitled to both civilian or military care or only to military care. Until the new system is in effect, the services may use existing procedures for identification.

In civilian facilities, the dependent will pay the first $25 of hospital expense or $1.75 per day, whichever is larger. If the physician decides a private room or private duty nursing care is required, a portion of the cost will be assessed

against the dependent. For treatment of an injury outside the hospital, the patient is to pay the physician the first $15 of costs.

FARM-CITY WEEK OBSERVED

The physicians of Texas were invited through the Texas Medical Association to participate in the observance of Farm-City Week, November 16-22. Designated by the President of the United States as a period during which to foster better understanding of the American way of life and the interdependence of those who work on the farms and those who work in the cities, this special week's activities were to be coordinated by Kiwanis International. The American Medical Association held membership on the national planning committee, and its Council on Rural Health recommended programs emphasizing child welfare, nutrition, physician procurement, preventive medicine, budgeting for medical expenses, environmental and rural sanitation, mental health, animal diseases related to man, effect of soils on nutrition, university extension health programs, and health education among youth groups.

Information about the Farm-City observance was mailed to each county medical society in the state.

Francis J. Gerty Named Mental Health Consultant

Dr. Francis J. Gerty, professor and head of the Department of Psychiatry at the University of Illinois College of Medicine, Chicago, has accepted an appointment as consultant for the analysis of mental health conditions in Texas initiated by the Committee on Mental Health of the Texas Medical Association. Preliminary plans for the program were made when the committee met in September, and $9,000 has been made available by Texas philanthropists for such a project.

Dr. Gerty was in Austin on November 4 to confer with the Committee on Mental Health and the Legislative Budget Board.

Several surveys relating to mental hospitals and mental health have been made in Texas. It is anticipated that this work will not be duplicated but that Dr. Gerty will review the results of these surveys; will acquaint himself personally with pertinent agencies, individuals, and institutions; and then will propose an optimum program for mental health in Texas, espeically in the area of state mental hospitals.

It is hoped that from Dr. Gerty's work will come recommendations for short term, specific steps that should be taken administratively and legislatively to develop an optimum program of modern care and treatment for the Texas mentally ill; for an interim, less specific follow-up plan of action; and for general, long range goals. In addition, he is being invited to make observations relative to mental health societies, foundations, and other groups interested in mental health; to the possibility of regional consultation services in psychiatry; and to proper care on a community level of patients who have been in state mental hospitals.

Committee Changes

Dr. Luke W. Able, Houston, has been appointed a member of the State Committee for American Medical Education Foundation.

Dr. M. C. Overton, Jr., Pampa, resigned from the Committee on Health Costs September 14. A vacancy remains on the committee.

Guest Speakers Announced For 1957 Annual Session

To assure an outstanding annual session in Dallas, April 27-May 1, the Texas Medical Association in cooperation with a number of related specialty societies has lined up more than 20 noted guest speakers, with several more yet to be obtained. The current list of medical authorities, including the sponsoring organization, follows:

Dr. Louis A. Brunsting, head of the Section on Dematology and Syphilology, Mayo Clinic, and professor of dermatology and syphilology, Mayo Foundation, Rochester, Minn.—Texas Dermatological Society.

Dr. Thomas H. Burford, professor of surgery, Washington University School of Medicine, St. Louis—Texas Chapter, American College of Chest Physicians.

Dr. D. Ewen Cameron, director of Allan Memorial Institute of Psychiatry, Montreal, Canada—Texas Neuropsychiatric Association.

Dr. Richard H. Chamberlain, professor of radiology, University of Pennsylvania Hospital, Philadelphia—Section on Radiology.

Dr. Warren H. Cole, Department of Surgery, University of Illinois College of Medicine, Chicago—Texas Division, American Cancer Society.

Dr. Laurence B. Ellis, associate clinical professor of medicine, Harvard Medical School, Boston—Texas Heart Association.

Dr. John B. Hickam, associate professor of medicine, Duke University School of Medicine, Durham, N. C.—Section on Internal Medicine.

Dr. John R. Hill, Section of Proctology, Mayo Clinic, Rochester, Minn.—Texas Society of Gastroenterologists and Proctologists.

Dr. Reynold A. Jensen, Department of Pediatrics, University of Minnesota Medical School, Minneapolis—Texas Neuropsychiatric Association and Texas Pediatric Society.

Dr. Arthur C. Jones, otolaryngologist, Jones Clinic, Boise, Idaho—Section on Eye, Ear, Nose, and Throat.

Dr. H. Relton McCarroll, assistant professor of clinical orthopedic surgery, Washington University School of Medicine, St. Louis—Texas Orthopedic Association.

Dr. R. A. Moore, vice chancellor of health professions, University of Pittsburgh, and professor of pathology, University of Pittsburgh School of Medicine, Pittsburgh—Section on Clinical Pathology.

Dr. H. B. Mulholland, professor of internal medicine and assistant dean, University of Virginia School of Medicine, Charlottesville—Texas Geriatrics Society.

Dr. Hugh L. Ormsby, associate in ophthalmology, University of Toronto, Toronto, Canada—Section on Eye, Ear, Nose, and Throat and Texas Ophthalmological Association.

Dr. Ralph O. Rychener, associate professor of ophthalmology, University of Tennessee, Memphis—Section on Eye, Ear, Nose, and Throat and Texas Ophthalmological Association.

Dr. John R. Schenken, professor of pathology and bacteriology, University of Nebraska College of Medicine, Omaha—Texas Division, American Cancer Society.

Dr. Roger B. Scott, associate professor of obstetrics and gynecology, Western Reserve University School of Medicine, Cleveland—Section on Obstetrics and Gynecology.

Dr. Wilson G. Smillie, formerly professor of preventive medicine, Cornell University Medical College, New York—Section on Public Health and Conference of City and County Health Officers.

Dr. Calvin M. Smyth, professor of surgery, University of Pennsylvania, Abington, Pa.—Section on Surgery.

Dr. George J. Thomas, associate professor of surgery and chairman of Section on Anesthesiology, University of Pittsburgh School of Medicine, Pittsburgh—Section on General Practice.

Dr. Robert W. Virtue, professor of anesthesiology, University of Colorado Medical Center, Denver—Texas Society of Anesthesiologists.

Dr. Preston A. Wade, professor of clinical surgery, Cornell University Medical College, New York—Texas Traumatic Surgical Society.

Dr. Frederick W. Williams, president, American Diabetes Association, and associate clinical professor of medicine, New York Medical College, New York—Texas Diabetes Association.

Dr. Wolf Zuelzer, director, Child Research Center of Michigan, Detroit—Section on Pediatrics.

In addition, Robert B. Anderson, former Secretary of the Navy and currently president of Ventures, Limited, New York, is to speak at the general meeting luncheon, and Dr. F. J. L. Blasingame of Wharton, a member of the Board of Trustees of the American Medical Association, will bring a message as a representative of the AMA.

Under the direction of Philip R. Overton, Austin, legal counsel of the Texas Medical Association, a refresher course on malpractice is being arranged; and a refresher course presentation on medical, legal, and insurance aspects of the treatment of industrial injuries is being planned again this year by Dr. F. C. Rehfeldt, Fort Worth. Both of these panel discussions will utilize the services of laymen outstanding in their fields.

Other speakers and special arrangements for the annual session will be announced in subsequent issues of the *Journal.*

Hotel reservations are being accepted by the Committee on Hotels, Dallas County Medical Society, 433 Medical Arts Building, Dallas. The Adolphus and Baker Hotels will be the Association headquarters, and the Statler-Hilton Hotel will be headquarters for the Woman's Auxiliary. Negro hotels in Dallas are Lane Hotel, 2611 Flora; Ross Avenue Courts, 3629 Ross Avenue; and El Centro, 906 North Central Expressway. In requesting hotel reservations, physicians are asked to give first, second, and third choice of hotel; type of accommodations desired; names of occupants and their relation to the organization; and the date and time of arrival and departure.

Speakers Announced For January Meeting

Three guest speakers for the Conference of County Medical Society Officials and Symposium on Legislation to be held in Austin January 26 have been announced. Mary D. Cain, Summit, Miss., crusading editor of *The Summit Sun;* Representative Olin Teague, Bryan, congressman from the Sixth District of Texas; and C. Joseph Stetler, Chicago, director of the American Medical Association's Law Department, will speak on legislative matters of concern to the medical profession. Newly elected officers of county medical societies will learn more of their duties, the services available to them through the Texas Medical Association, and problems of other societies through panel discussions and talks by Association officials.

In conjunction with this Saturday conference, to be held simultaneously with meetings of Association committees and the day preceding the Executive Council meeting, a ceremony will mark the acquisition of the twenty-five thousandth volume by the Memorial Library of the Association and pay tribute to those who have made outstanding contributions to the Library.

MEDICAL STUDENT DAY

Medical Student Day will be held December 14 at Baylor University College of Medicine, Houston, and December 15 at the University of Texas Medical Branch, Galveston. Participating in both programs will be Dr. Milford O. Rouse, Dallas, President of the Texas Medical Association, "A Look at Texas Medicine Today"; Pat Bailey, Austin, assistant general counsel, "The Legal Side of Your Practice"; Dr. Harvey Renger, Hallettsville, chairman, Council on Medical Economics, "Medical Economics: The Business Side of Your Practice"; Dr. Thomas L. Royce, Houston, member, Committee on Public Relations, "Your Practice and Public Opinion"; and Mr. C. Lincoln Williston, Austin, "You, Your Practice, and Socioeconomic and Legislative Problems Which Affect It."

At the Houston program, Dr. Denton Kerr, Houston, President-Elect of the Association, will deliver the welcome, and Dr. J. T. Billups, Houston, chairman of the Board of Councilors, will speak on medical ethics.

In Galveston, D. Bailey Calvin, Ph.D., dean of the Medical Branch, will preside; Dr. E. S. McLarty, Sr., Galveston, will present the welcome; and responses will be given by Dr. John B. Truslow, executive director; John E. Hildebrand, president of the junior class; and Harold Brannan, president of the Medical Branch chapter of the Student American Medical Association.

★ County Societies

State Level Business

Minutes of several county medical societies indicate that discussions were held at the county level on the Dependents Medical Care Act, which was acted upon by the Texas Medical Association House of Delegates in special session September 9. Also, several county societies reported having adopted amendments to their constitutions and by-laws which will make them conform with the state changes regarding provisional memberships, indoctrination programs, and intern and resident members.

Examinations of Barbers

The practice of signing health certificates for barbers and beauty operators without adequate physical examination has been condemned by the *Lubbock-Crosby Counties Medical Society* as being unscientific and unethical. At a recent meeting of its executive board, it was recommended that inasmuch as tuberculosis is mentioned specifically in the state law governing this procedure, a diagnostic chest roentgenogram should be a minimum part of the examination. Each member of the county society is to be provided with a copy of the law relating to barber and beauty operator examinations (Vernon Texas Penal Code, Article 734 b, Section 9 Paragraph B).

Help for Ball Club And Fun for Children

Members of the *Tarrant County Medical Society* and local dentists sponsored a "pre-back-to-school" baseball game featuring the Fort Worth Cats late in August by buying tickets for underprivileged children. Each doctor was asked to buy a book of 25 tickets to distribute to children of his own choosing, or to be given to orphanages. The local minis-

terial association helped by finding needy children in Sunday school classes.

Harris County Supports Christmas Card Sales

In a recent issue of the *Bulletin of the Harris County Medical Society*, a sample of the Christmas card being sold by the Woman's Auxiliary to the Texas Medical Association was enclosed, and doctors were urged to place their orders early. Proceeds from the sales will go to the American Medical Education Foundation.

The card, printed in a deep green with a design in black, was designed by Malcolm Thurgood, one of the Southwest's leading artists. The picture shows a doctor on horseback approaching a lighted cabin; a figure waves a greeting from the doorway, and a brilliant star shines overhead. Inside the folder is the simple greeting, "A Merry Christmas and a Happy New Year."

Dr. Denton Kerr, Houston, a member of the Harris County Medical Society, and President-Elect of the Texas Medical Association, and Mrs. H. S. Renshaw, President-Elect of the Woman's Auxiliary, hold the artist's sketch for the cover of the Christmas card which is being sold by the Auxiliary to aid medical education. Cards may be purchased through the Auxiliary for $2.50 per box of 25. December 1 is the deadline for placing orders.

City-County Hospital

A special business meeting of the *Harris County Medical Society* was called early in September to discuss the possibility of establishing a city-county hospital in the Texas Medical Center. Since no definite policy had been set by the medical society, all doctors were invited to attend and express their opinions regarding the problem. The *Bulletin* noted, "At the present it is thought that the variety of opinions presented has led to confusion in the mind of the public and the city and county administration, and the over all impression is given that the medical profession cannot agree among themselves."

After discussion, it was resolved that additional hospital beds would best serve the majority of the patients if they were built either adjacent to the present Jefferson Davis Hospital or in areas of the county which lack adequate hospital space.

Programs

Programs presented at county medical society meetings during the past three months include:

Big Bend Counties Society—Medical Digest films on acute abdominal conditions and carcinoma of the thyroid.

Bowie County Society—"Use of Acrylic Plastic Molds in Intraoral Carcinoma" and "Trauma of the Face."

Harris County Society—"Border Lines of Cancer: Problems in the Management of Doubtful Lesions" (courtesy of Upjohn Company), a live closed circuit television presentation.

Hill County Society—Films, "Upper Abdominal Emergencies" (courtesy of Upjohn Company) and "The Smallest Foe" (courtesy of Lederle Laboratories).

LaSalle-Frio-Dimmit Counties Society—"Obstetric Emergencies," Dr. Frank Posey, San Antonio.

McLennan County Society—"Current Status of Institutional Therapy," Dr. Richard F. Allison, Sanatorium; "Some Interesting Pathologic Lesions," Dr. A. C. Broders, Temple; and "Management of Mass Casualties," Col. John Kulczyski, James Connally Air Force Base.

Tarrant County Society—"Surgery of the Hand," Drs. J. R. Cochran and L. P. Kleuser, Fort Worth. "Sunlight and Disease," Drs. J. M. Riddell, Thomas L. Shields, William E. Flood, and Edmund N. Walsh, Fort Worth.

★ District Societies

Eighth District Society

The Eighth District Medical Society met in Freeport October 25, and elected Dr. E. Peter Garber, Galveston, president; Dr. George M. Stevens, Lake Jackson, vice-president; Dr. John H. Childers, Galveston, secretary-treasurer; and Dr. Carlos Fuste, Alvin, Councilor. The scientific program consisted of three presentations: "Surgical Emergencies in Children," Dr. Fred Wolma; "Present Status of Sub-Acute Bacterial Endocarditis," Dr. Milton R. Hejtmancik; and "Tibial Fractures," Dr. William Ainsworth. All the doctors who gave scientific talks are from the University of Texas Medical Branch, Galveston.

Following the business and scientific meetings, a barbecue was held for the doctors and their wives.

WOMAN'S AUXILIARY

Mrs. Robinson Becomes Southern Auxiliary President

When the golden anniversary meeting of the Southern Medical Association was completed November 15 in Washington, D. C., a Texan, Mrs. O. W. Robinson of Paris, began her term as President of the Woman's Auxiliary. Mrs. Richard C. Bellamy, Liberty, President of the Woman's Auxiliary to the Texas Medical Association, was present when Mrs. Robinson took office, serving as official delegate from the state organization.

A native of Mineola, Mrs. Robinson grew up in Denton and was educated at North Texas State Teachers College and Texas State College for Women. Before her marriage to Dr. Robinson, she taught in public schools and in Northwestern College at Alva, Okla. First located in Biardstown, the Robinsons have been in Paris since the late twenties.

MRS. O. W. ROBINSON

Mrs. Robinson has been active in civic, charitable, and professional organizations, but has found time to enjoy her home, sewing, cooking, checkers with her companion husband, and the unusual hobby of magic.

She is a member of the International Federation of the American Association of University Women, and is active in her local group. She is listed in *Who's Who in the South and Southwest.*

Mrs. Robinson has participated in all levels of medical auxiliary work. A charter member of the Lamar County Auxiliary, she was its president in 1939-1940. She was Council Woman for District 14 for two years, and held various committee positions in the Woman's Auxiliary to the Texas Medical Association before becoming its First Vice-President in 1948-1949, President-Elect in 1950-1951, and President in 1951-1952. Prior to her election as President-Elect of the Southern Auxiliary a year ago, Mrs. Robinson had been Vice-President of that organization. She also is a member of the Woman's Auxiliary to the American Medical Association.

As an expression of interest in the Texas Medical Association and its new building, begun during Mrs. Robinson's administration as President of the Auxiliary, the Robinsons donated a handsome silver tray for use at Association functions.

Mrs. Robinson is the sixth Texas woman to serve in the Southern Auxiliary's highest office. Mrs. E. H. Cary, Dallas, was the first President of the organization in 1925; Mrs. O. M. Marchman, Dallas, was President in 1927; Mrs. S. A. Collom, Sr., Texarkana, in 1931; Mrs. Frank N. Haggard, San Antonio, in 1937; and Mrs. L. S. Thompson, Dallas, in 1951.

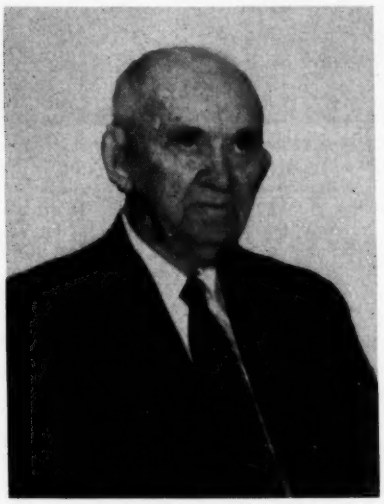
Officers of the Woman's Auxiliary to the Texas Medical Association for 1956-1957: President, Mrs. Richard C. Bellamy, Liberty; President-Elect, Mrs. H. S. Renshaw, Fort Worth; First Vice-President, Mrs. Harold Lindley, Pecos; Second Vice-President, Mrs. Ramsay H. Moore, Dallas; Third Vice-President, Mrs. William D. Nicholson, Freeport; Fourth Vice-President, Mrs. Lynn Hilbun, Henderson; Fifth Vice-President, Mrs. R. B. G. Cowper, Big Spring; Treasurer, Mrs. William C. Barksdale, Borger; Recording Secretary, Mrs. J. L. Jinkins, Galveston; Corresponding Secretary, Mrs. E. R. Richter, Dayton; Publicity Secretary, Mrs. Joe Thorne Gilbert, Austin; Parliamentarian, Mrs. John C. Parsons, San Antonio; Executive Secretary, Miss Hazel Casler, Austin.

RECENT DEATHS

DR. FELIX P. MILLER

Dr. Felix Perryman Miller, Past President of the Texas Medical Association and builder of Texas' first x-ray machine, died of carcinoma of the liver and circulatory failure August 23, 1956, at his home in El Paso, Texas.

Dr. Miller was born August 21, 1874, in Turnersville, and was the son of W. J. and Emeline (Black) Miller. He attended elementary schools in El Paso and was graduated



DR. FELIX P. MILLER

from the Colorado City High School. Dr. Miller entered the University of Texas Department of Pharmacy, then located in Galveston, and became a registered pharmacist. He received his medical education at the University of Texas Medical Branch, Galveston, and was graduated in 1899. One year before his graduation from medical school, Dr. Miller helped build the first x-ray machine ever used in

An obituary ordinarily will not be published more than four months after date of death. Cooperation in reporting deaths of physicians and in furnishing appropriate biographical material promptly is solicited.

Texas. It was made from an old sewing machine, copper wire coils, and a Crook's tube and fluoroscope from England. In June, 1955, he presented this original machine to the University of Texas Medical Branch. He interned in John Sealy Hospital, Galveston, before beginning his practice in Pecos, where he remained until 1904. At that time, he moved to El Paso, where he practiced until the time of his death.

A member of the Texas and American Medical Associations through the El Paso County Medical Society throughout his career, Dr. Miller served as President of the state organization in 1928-1929 and was elected to emeritus membership in 1951. He was Councilor for the First District from 1909 until 1918, and was chairman of the Section on Surgery in 1933. He was a past president of his county society, a past vice-president of the Southern Medical Association, and a member of the Pan-American Medical Association, Southwestern Medical and Surgical Association, National Tuberculosis Association, American Hospital Association, Texas Surgical Society, and International College of Surgeons, and a fellow of the American College of Surgeons and diplomate of the American Board of Surgery. He had served as local surgeon for the Texas and Pacific Railroad, and for some time early in his career was a pharmacist at John Sealy Hospital, Galveston. During Texas-Mexico border disturbances about 1910, Dr. Miller joined Pancho Villa's army to help treat soldiers wounded in the Battle of Juarez.

He was a thirty-third degree Mason, and was on the board of directors of the Scottish Rite Crippled Children's Hospital, Dallas, and the Scottish Rite Dormitory, Austin. He was a member of the Presbyterian Church.

Dr. Miller's first wife, the former Miss Iva Connell, died in 1912. In 1916, he married Miss Jane Walker in Victoria. She died in February, 1956. Survivors are two sons, Felix P. Miller, Jr., Mobile, Ala., and Sam O. Miller, Houston; three daughters, Ivadell Miller Fleck, Childersburg, Ala.; Jean Miller Davison, West Point, N. Y.; and Grace Miller Mapel, El Paso; and a sister, Mrs. W. H. Brennand, Fort Davis.

DR. E. M. CYRUS, JR.

Dr. Elbert Munsey Cyrus, Jr., died of a heart attack September 10, 1956, at his home in Fort Worth, Texas.

He was born September 10, 1914, in Cleburne and was the son of Elbert Munsey and Janie (Lees) Cyrus. After attending Texas Christian University, Fort Worth, for a year, he entered the University of Texas, Austin, and then received his medical education at the University of Texas Medical Branch, Galveston, being graduated in 1939. He later attended the University of Pennsylvania Graduate School of Surgery. Dr. Cyrus interned at the City-County Hospital, Fort Worth (now John Peter Smith Hospital), and spent some time in residency there. He also did resident work at Buffalo General and Buffalo Children's Hospitals. He was associated for a time with the Department of Pathology, University of Texas Medical Branch, Galveston. From 1942 until 1946 he was in military service as a lieutenant commander with the Third Marine Division in the United States and South Pacific. He was in residency in Buffalo, N. Y., before moving in 1949 to Fort Worth, where he had been in private practice until the time of his death.

Dr. Cyrus maintained his membership in Tarrant County Medical Society throughout his career, and was a member of the Texas and American Medical Associations, Thirteenth District Medical Society, Fort Worth Academy of Medicine, and Nu Sigma Nu medical fraternity; a diplomate of the American Board of Surgery; and a fellow of the American College of Surgeons. He was a member of the Presbyterian Church.

On April 16, 1942, Miss Rosemary Spears and Dr. Cyrus were married in La Jolla, Calif. Mrs. Cyrus survives, as do four children, Jane Ann, Roberta, Richard, and Bill; and his mother, Mrs. E. M. Cyrus, Sr., all of Fort Worth.

DR. JOEL I. COLLIER

Dr. Joel Isham Collier, Navasota, Texas, died in a Memphis, Tenn., hospital September 1, 1956, of arteriosclerotic coronary occlusion.

He was the son of Julius Weaver and Nancy Anne (Payne) Collier, and was born August 20, 1880, in Houston County. After being graduated from Sam Houston Normal School at Huntsville, Dr. Collier taught school at Conroe, Lufkin, and Marble Falls before entering the University of Texas Medical Branch, Galveston. After his graduation with honors in 1907, he interned at the John Sealy Hospital, Galveston, and began his general practice in Coryell County. In 1911, he moved to Taylor, and was associated with Dr. G. A. Wedemeyer for 17 years. During this time, he took postgraduate training in eye, ear, nose, and throat at New Orleans, San Francisco, and New York. In 1927, Dr. Collier became head of the eye, ear, nose, and throat department of the Buie Clinic, Marlin, where he practiced until a stroke forced him to retire in 1951.

DR. JOEL ISHAM COLLIER

Dr. Collier was a member of the Texas and American Medical Associations throughout his career, most recently through the Falls County Medical Society. He was president of the Falls County group in 1935, and was secretary in 1943. In 1952, he was elected to honorary membership in the state organization.

He was a thirty-second degree Mason and a member of the Shrine; he also was a member of the Baptist Church and the Lions Club.

Dr. Collier and Miss Susie Saunders were married in Navasota on June 9, 1908. Survivors include Mrs. Collier; a son, Ivan T. Collier, Bryan; a daughter, Mrs. Leslie L. O'Conner, Memphis, Tenn.; and five grandchildren.

DR. KENNETH B. WALBORN

Dr. Kenneth Boone Walborn, Fort Worth, Texas, died of granulocytosis and adrenal failure in a local hospital September 6, 1956.

Dr. Walborn was born April 10, 1911, in Shawnee, Okla., and was the son of Earl and Margaret Walborn. He attended the Oklahoma Baptist University at Shawnee for one year, then entered Oklahoma University, Norman, in 1930. He was graduated from the Baylor University College of Medicine, Dallas, in 1937, interned at St. Joseph's Hospital, Fort Worth, for a year, and spent six months in residency at the Methodist Hospital, Fort Worth. He was visiting city-county physician in Parkland Hospital from 1939 until 1941, when he entered the Army Medical Corps. He was a captain and was stationed at Brownsville during part of World War II. He also was a medical inspector at Carlisle Barracks, Penn., and was an officer of the Texas National Guard School, Camp Claiborne, La. In 1946, he became associated with the Lyle Clinic in Fort Worth, and practiced there until the time of his death. He was a staff member of St. Joseph's Hospital.

A member of the Texas and American Medical Associations through the Tarrant County Medical Society, he also

DR. KENNETH B. WALBORN

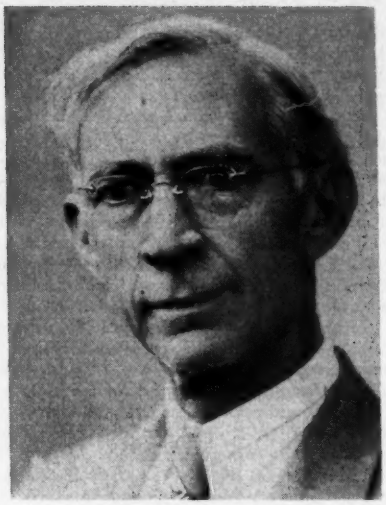
was a member of the Thirteenth District Medical Society, the Fort Worth Academy of Medicine, Sigma Chi social fraternity, and the Christian Church.

Survivors are a daughter, Miss Peggy Walborn, and his mother, Mrs. Margaret Walborn, both of Fort Worth.

DR. R. D. HOLT, SR.

Dr. Russell Devereaux Holt, Sr., formerly of Cranfills Gap, Texas, died July 26, 1956, in Staunton, Va., at the home of his daughter.

Dr. Holt was born in Goldsboro, N. C., March 3, 1870, and attended public schools there. He was graduated from the Medical College of Virginia, Richmond, in 1899, and entered the United States Indian Field Medical Service in 1900. He served as a physician in various parts of North Carolina, New Mexico, and Arizona, with the exception of one year, 1910, when he practiced privately in Wiggins, S. C. After his retirement from government service, Dr.



DR. R. D. HOLT, SR.

Holt began private practice in Cranfills Gap in 1942, but retired from active practice in 1952, when he moved to Virginia.

He was elected to honorary membership in the Texas Medical Association in 1951 after having been a member for many years through the Bosque County Medical Society. He was president of his local group in 1943. He also was a member of the Baptist Church and the Masonic Lodge.

From 1892 until 1896, Dr. Holt served in the quartermaster corps of the United States Army in Philadelphia.

Survivors include two sons, Dr. R. D. Holt, Meridian, and C. J. Holt, Staunton, Va.; two daughters, Mrs. L. M. Cangiano, Boston, and Mrs. Olive Couch, Staunton; two sisters, Mrs. Lillian Noble, Escondido, Calif., and Mrs. C. R. Ross, Albemarle, N. C.; one brother, E. M. Holt, Washington, D. C.; and seven grandchildren.

DR. JOSEPH H. ALEXANDER

Dr. Joseph H. Alexander, Zavala, Texas, died of coronary thrombosis August 25, 1956.

Dr. Alexander was born in Waco in 1870, and attended public schools in Meridian. He attended the University of Texas Medical Branch, Galveston, but was graduated from the Memphis Hospital Medical College, Memphis, Tenn., in 1891. He began his private practice of medicine in Meridian. In 1936, he moved to Corpus Christi, where he practiced two years; then he spent 10 years in Ranchester, Wyo. He returned to Texas in 1948 and settled in Zavala. During his career, he took postgraduate courses in New York, Chicago, and New Orleans. For a time, he was local surgeon for the Gulf-Colorado and Santa Fe Railroads.

He was a member of the Texas and American Medical Associations almost continuously throughout his career through the Bosque or Angelina Counties Medical Societies. He was president of the Bosque County Society in 1930 and 1931. He was a York Rite, Scottish Rite, and Royal Arch Mason and a member of the Shrine, and was a steward in the Methodist Church for many years.

Survivors include Mrs. Alexander, Zavala; a son, Dr. Elmo Alexander, Ceres, Calif.; three daughters, Mrs. Kathleen Murphine, Santa Ana, Calif.; Mrs. Lorene Barnett, Hillsboro; and Mrs. Arabella Pendergrass, Oakdale, Calif.

two sisters, Mrs. T. C. Robertson, Houston, and Mrs. Wells Bain, San Antonio; two brothers, Dr. Lin Alexander, Okmulgee, Okla., and Dr. Raymond L. Alexander, Spur; and several grandchildren.

DR. A. J. RICHARDSON, SR.

Dr. Arthur J. Richardson, Sr., who had practiced medicine in Jasper, Texas, from 1911 until a few months ago, died of acute myelogenous leukemia September 15, 1956, in Jasper.

The son of Francis Marian and Lou Lee Richardson, he was born September 3, 1882, in Jasper, and attended public schools and the East Texas College there. He received three

DR. A. J. RICHARDSON, SR.

years of his medical education from the University of Texas Medical Branch, Galveston, but was graduated from Tulane University School of Medicine, New Orleans, in 1911, and returned to Jasper to begin his private medical practice. He opened his own hospital in 1927, and in 1950 it was rebuilt. Dr. Richardson, Sr., was joined in practice by his son, Dr. A. J. Richardson, Jr., in January, 1946. His nephew, Dr. J. W. McCall, Jr., had practiced with him from 1949 until September, 1955, and another nephew, Dr. J. A. Richardson, III, practiced with him a little more than a year. Dr. T. R. Jones joined the Drs. Richardson in December, 1955.

Dr. Richardson was a member of the Texas and American Medical Associations through the Jasper-Newton Counties Medical Society, and had held all the offices in that society at some time during his career. He was elected to honorary membership in the State Association in 1955. Dr. Richardson also was a member and past president of the Tenth District Medical Society and a member of Theta Beta Pi medical fraternity. He was an active member of the Methodist Church, and served on the board of stewards for many years until he was retired as an honorary member. He was a life member of the Texas Lions League for Crippled Children, and was a charter and honorary life member of the Jasper Lions Club. In November, 1955, he was honored by the Jasper High School football team during half time activities at the school's first homecoming, and was presented an award of recognition for his 40 years of service to the team. He also was presented a plaque from the school band and an honorary pin from the Future Farmers of America club. He was examining physician for the Selective Service system for many years, and was awarded certificates of service and appreciation from both President Franklin D. Roosevelt and President Harry S. Truman.

Miss Jessie Henderson and Dr. Richardson were married December 15, 1912, in Jasper. She survives, as do their son, Dr. A. J. Richardson, Jr., Jasper, and a brother, T. S. Richardson, Beaumont.

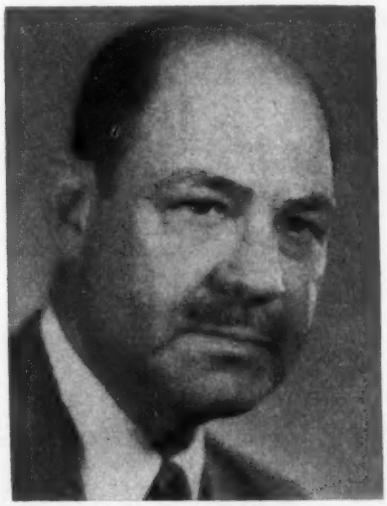
DR. LeROY B. DUGGAN

Dr. LeRoy Bates Duggan, Houston, Texas, died as a result of gunshot wounds August 27, 1956, in a local hospital.

Dr. Duggan was born in Dallas March 9, 1901, and was the son of William Y. and Margaret Anna (Grafton) Duggan. He attended high school in Belton and received a bachelor of arts degree from the University of Texas, Austin, in 1924. He was graduated from the University's Medical Branch, Galveston, in 1928, then interned in St. Mary's Infirmary, Galveston, and served briefly as assistant director of the Dallas public health department. He was assistant resident in medicine in Barnes Hospital, St. Louis, for two years, and in 1932-1933 served there as instructor in medicine at Washington University. In 1933, Dr. Duggan moved to Houston, where he began his private practice of gastroenterology. He was clinical associate professor of medicine at Baylor University College of Medicine in Houston.

A member of the Texas and American Medical Associations through the Harris County Medical Society, he also was a member of the Ninth District Medical Society, Houston Academy of Medicine, Southern Medical Association, Houston Society of Internal Medicine, Texas Society of Gastroenterologists and Proctologists, American Gastroenterological Association, Texas Club of Internists, American Psychosomatic Society, and Association of Military Surgeons of the United States. He was a fellow of the American College of Physicians and a diplomate of the American Board of Internal Medicine and its subspecialty group of gastroenterology. He was a member of the Episcopal Church.

Dr. Duggan served in the Navy during World War II as a lieutenant commander at the naval base hospital, Cor-



DR. LeROY B. DUGGAN

pus Christi. In November, 1945, he went into the United States Naval Reserve as a captain, and held that rank at the time of his death.

Dr. Duggan is survived by his wife, Houston; and four sisters, Mrs. Pattie McDaniel, Denison; Dr. Anne S. Duggan, Denton; and Mrs. Helen Nolen and Mrs. Frankie Robinson, both of Austin.

DR. FRANCES VANZANT

Dr. Frances Ralston Vanzant, Houston, Texas, died August 27, 1956. She had been ill for 18 years with hypertension, diabetes, and septicemia.

Dr. Vanzant was born June 20, 1902, in Ferris, and was the daughter of Dr. Birto Thomas and Lucille (Ralston) Vanzant. She attended Houston High School; Mary Baldwin Seminary, Stanton, Va.; The University of Texas, Austin; Southwestern University, Georgetown; and Rice Institute, Houston, from which she was graduated in 1922. She then entered the University of Texas Medical Branch, Galveston, and received her doctor of medicine degree in 1926.

DR. FRANCES R. VANZANT

After interning in the John Sealy Hospital, Galveston, she received a fellowship in the Mayo Foundation, Rochester, Minn., and worked there nearly four years. She then received a fellowship from the Josiah Macy, Jr., Foundation on the basis of her work in gastroenterology. Under this fellowship, she studied two years, then became an instructor in medicine and assistant director at the University Hospital, University of Minnesota, Minneapolis, a post she held about three years. In 1935, Dr. Vanzant returned to Houston, where she entered private practice in her specialty. When war broke out in Spain in 1937, Dr. Vanzant became the first Houstonian and perhaps the only woman physician to join the Medical Bureau to Aid Spanish Democracy. She traveled to Spain with a unit of nurses and physicians and did active work in the war area, directing a medical hospital.

Dr. Vanzant was a member of the Texas Medical Association through the Harris County Medical Society, which she served as secretary in 1937. Her other memberships included Mayo Clinic Alumni Association, American Gastroenterological Association, Texas Society of Gastroenterologists and Proctologists, Episcopal Church, and Business and Professional Women's Club. She was a fellow of the American College of Physicians.

During her long illness she maintained an interest in medical affairs, and for several short periods she was able to practice on a limited scale. She developed numerous hobbies, and attained semiprofessional status in the field of oil painting.

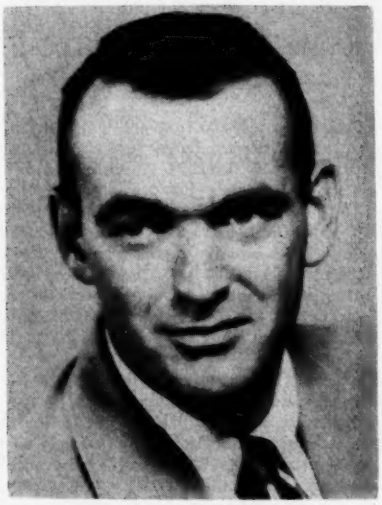
Dr. Vanzant is survived by two brothers, Dr. Thomas J. Vanzant, Houston, and Commander Joseph C. Vanzant, Long Beach, Calif.

DR. G. A. HATAWAY

Dr. Garrett Arthur Hataway, Longview, Texas, died in a Dallas hospital August 18, 1956, of acute pancreatitis.

He was born October 21, 1921, in Eldorado, Ark., and was the son of Garrett Arthur and Willia (McLeish) Hataway. Dr. Hataway attended Louisiana Polytechnic Institute, Ruston, La., but was graduated from the University of Texas in 1948. He spent two years in Duke University School of Medicine, Durham, N. C., then entered the University of Texas Southwestern Medical School, Dallas, from which he was graduated in 1952. He spent a surgical internship and residency at Parkland Hospital, Dallas, and taught physiology briefly at Southwestern Medical School. In 1955, he began his private practice of medicine in Longview, and had been there a little more than 10 months at the time of his death.

Dr. Hataway had been a member of the Texas Medical Association through the Dallas or Gregg Counties Medical Societies since his graduation from medical school, and was serving as secretary of the Gregg County Society. He also was a member of the American Medical Association, the American Society of Anesthesiologists, and the Episcopal Church, and he headed a disease control unit in civil defense.



DR. G. A. HATAWAY

He spent three and a half years in the Army Air Force as a sergeant with the Twelfth Bomber Group and the Eighty-Second Bomber Squadron in India and Burma.

Miss Frances Richards and Dr. Hataway were married August 18, 1951, in Athens. Mrs. Hataway and their 2 year old daughter, Ann McLeish, survive, as does a brother, William Byrd Hataway, Wink.